The Driller

APRIL 1960

Bucyrus-Erie 22-W drills a suburban home well near Jamul in southern California.

WITH THE NEW 30-R

YOU MOVE IN

SET UP

DRILL YOUR WELL

and head for the next job FASTER than any other drill in its class!

You cruise to the site at full highway speeds . . . raise the derrick hydraulically . . . lower three hydraulic outriggers . . . rotate at any speed from 0 to 100 rpm . . . exert up to 30,000 pounds down pressure . . . add new pipe quickly, easily and finish in time to squeeze in that extra job you used to pass up — the job that brings you that important extra profit.

You can operate through a power take-off from the truck's engine (30-RP) or from a separate power unit (30-RS). You also have your choice of rotary for holes up to 7⅞ inches or down-the-hole tools.

Let your Bucyrus-Erie distributor show you feature-for-feature why you can be the well-diggingest guy around with a new 30-R. For details write Bucyrus-Erie Co., South Milwaukee, Wisconsin.

4W59

BUCYRUS ERIE

. . . MOST RESPECT NAME IN THE FIELD

NOW... BUY EXACTLY WHAT YOU NEED!

Monitor PS

Monitor PK

PROVEN QUALITY PITLESS UNITS FOR SUBMERSIBLE PUMPS AT COMPETITIVE PRICES

CHOOSE THE METHOD

You can cut the well casing below the frost line and install the Monitor PS spool-type unit. Or . . . you can use the regular well casing to above the ground and install a Monitor PK L-type Kit.

PICK THE PARTS

Both Monitor PS and PK offer a choice of water-tight or ventilated cap. Monitor PS units are available with alternative spools . . . your choice between a plain spool or one that includes built-in air charger and accessible check valve. Monitor PK offers choice between clamp-on or weld-on discharge fitting.

BUILD YOUR PROFIT

Combine the advantage of picking the parts with low prices and minimum labor. This keeps your cost down . . . and leaves more room for profit.

END YOUR WORRIES

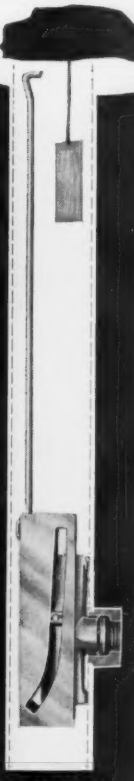
Monitor research has produced products that are rugged and dependable . . . so much so that only Monitor backs you up with a 5-year guarantee. Costly call backs are reduced to a minimum.

COMPLETE PITLESS UNIT AS LOW AS

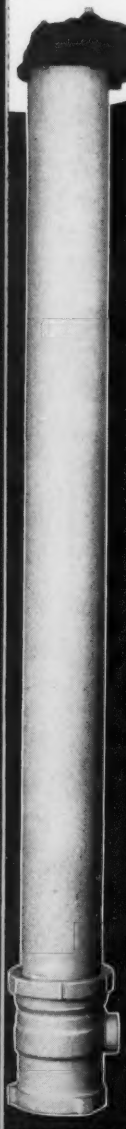
$54.60 RETAIL*

COMPLETE KIT AS LOW AS

$37.50 RETAIL*



PK L-TYPE UNIT



SPOOL-TYPE UNIT

In addition to the Monitor PS and PK, there are Monitor Pitless Units for every type of installation.

**For 4" well*

Monitor

BETTER WATER SYSTEMS— THRU RESEARCH

For new catalog and low prices on more than 400 Monitor Pitless units, mail coupon today

ADVERTISING DEPT.
BOX 1645, (Baker Mfg. Company)
MADISON, WISCONSIN

Name .....

Occupation .....

Street .....

City ..... State .....

My Distributor Is .....

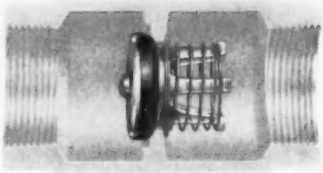
City .....

NEW REVOLUTIONARY FLOMATIC FOOT AND LINE CHECK VALVES

FOOT VALVE

New Design Sets Industry Standard

By developing a new type disc retainer guide of DuPont Delrin*, to replace the usual vulnerable metal part, Flomatic has engineered a highly significant design improvement, dramatically confirmed in rigid lab tests.



LINE CHECK VALVE

FLOMATIC'S NEW VALVE MEANS:

- No mineral build-up on the one moving part.
- No swelling or liquid absorption with new disc retainer guide of Delrin.
- Lowest flow resistance and friction rate.
- End to sticky valves, faulty seating.
- Superb adaptability in severe water, oil and gas conditions to 180 degrees F.

Call or Write for Complete Details. Learn How This Exclusive Flomatic Development Can Benefit You Now!

*DuPont registered trademark for its acetal resin

WHITE FLOMATIC

Manufacturer of Quality Valves

DIVISION OF FLOMATIC CORP., HOOSICK FALLS, N. Y.

City .....

The Driller

South Milwaukee, Wisconsin

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Drills up to 30 feet an hour in granite

MISSION HAMMERDRIL

Trade Mark

Bottom Hole Impact Tool

The Mission HAMMERBIT

Patents Issued And Pending

Here's the economical answer to high speed drilling in hard rock. The HAMMERDRIL® is economical because of its design—only two moving parts in the high pressure tool, and only three moving parts in the low pressure tool. Economical because impact parts are heat-treated high alloy steel, moving parts are friction and wear resistant. Economical because you can use it on your present rotary rig with suitable air compressor capacity. Mission HAMMERBITS® feature massive tungsten carbide inserts which can be *resharpened in the field.* The HAMMERDRIL with the HAMMERBIT cuts the cost per foot of drilling every foot through hard rock.

The Mission HAMMERDRIL is sold and serviced throughout the United States. Write to Mission for more information on what the HAMMERDRIL can save you—actual field savings under field conditions.

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4 BIG MARKETS for DEMING WATER SYSTEMS

F SERIES SUBMERSIBLE

- Replacement of Obsolete Systems
- Replacement of Inadequate Systems
- New Suburban & Farm Homes
- Prospects for a Second or "Stand-by" System

75 CONVERTIBLE JET

More people are building homes beyond city water mains. More obsolete water systems need replacement. More people have found the water systems they bought are inadequate for their needs. More people are prospects for a "second" or "stand-by" water system for use in emergencies, or when their present system is down for repairs. Whatever the market... whatever the need... SELL DEMING... the reliable line that blankets the 4 BIG MARKETS for modern water systems.

OUR 80th YEAR — PROGRESS WITH EXPERIENCE

See your Deming Representative... or mail coupon today for Catalog C-59

NAME_____

COMPANY_____ POSITION_____

ADDRESS_____

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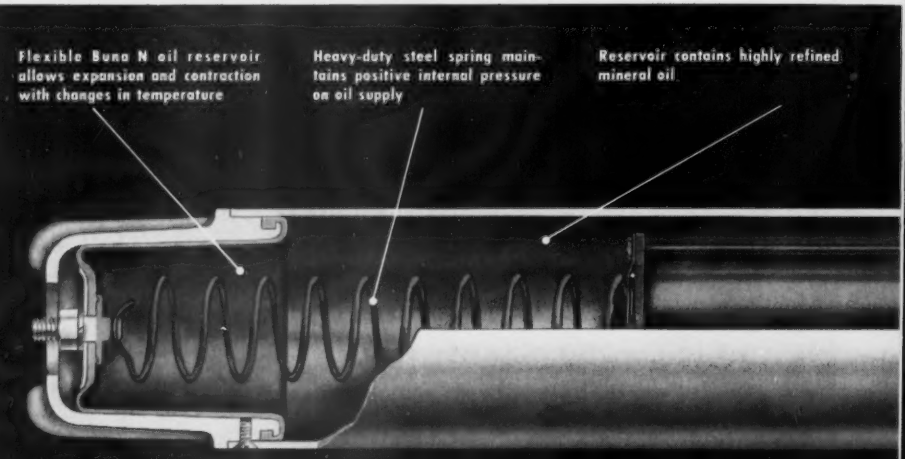
The DEMING Co.

416 BROADWAY • SALEM, OHIO

General Electric now offers

NEW TWO-WIRE, OIL-FILLED


Flexible Buna N oil reservoir allows expansion and contraction with changes in temperature
Heavy-duty steel spring maintains positive internal pressure on oil supply
Reservoir contains highly refined mineral oil

TWO-WIRE DESIGN ELIMINATES OUTSIDE CONTROLS FOR FAST, EASY INSTALLATION

General Electric now offers a new two-wire, oil-filled submersible pump motor for four-inch well applications that greatly simplifies motor installation and hookup.

The new two-wire motor features a running capacitor built inside the motor to provide inherent quiet operation. There are no outside controls and the two-wire design eliminates chances for error or confusion during hookup. This new motor is the result of the experience and know-how G.E. has gained in successfully powering thousands of submersible pumps during the past seven years.

Install it! Forget it! There's no maintenance required. The new permanently-lubricated General Electric motor can carry the same high service factor loads first introduced in G.E.'s 3-wire submersible pump motor, without fear of mechanical damage. For instance, a G-E ⅓-hp motor can do many jobs that formerly required a ½-hp motor. *Unrestricted* windings, free to expand and contract with variations in temperature, practically eliminate the adverse effects associated with stalled or overload conditions; give the new G-E motor unsurpassed reliability.

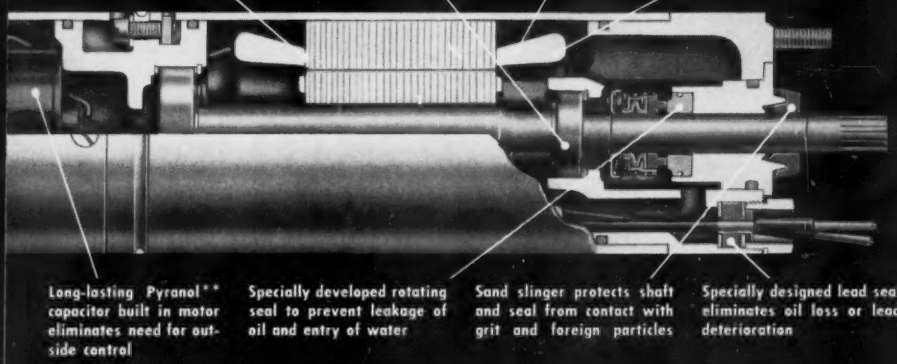
Oil-filled design keeps moisture out! A flexible oil reservoir, held under constant compression by a heavy-duty steel spring, maintains positive internal pressure of oil at all times to keep water out. Moisture-resistant Mylar* polyester film slot insulation and Formex** wire protect against aging and electrical stresses.

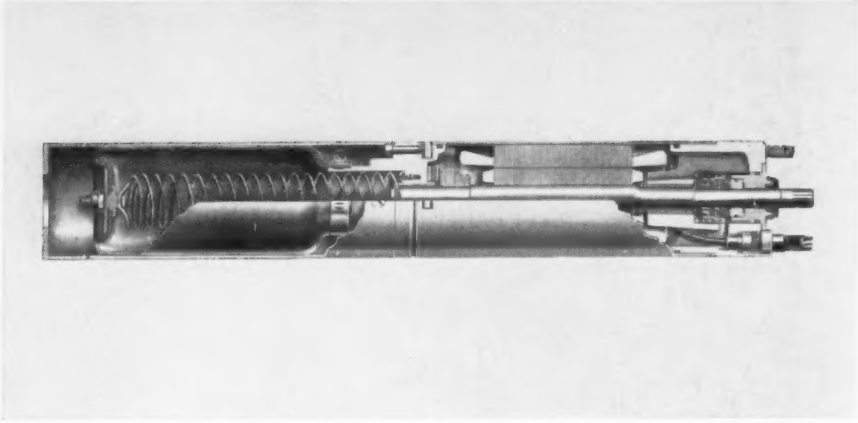
Why not investigate General Electric submersible pump motors today—available in ratings of ⅓ to 5 hp. Contact your Apparatus Sales Office or write for Bulletin GEA-6996, General Electric Co., Schenectady 5, N. Y. 738-2

* Trade-mark of DuPont Co.
** Reg. Trade-mark of General Electric Co.

GENERAL ELECTRIC

SUBMERSIBLE PUMP MOTORS


Mylar slot insulation is 35 times more moisture resistant than paper insulation
Ball bearings reduce internal friction in motor; permit use of full starting torque on load
Specially selected Formex insulated wire assures high dielectric strength
Windings are triple dipped, bake varnished for protection against moisture, electric stresses
Long-lasting Pyranol** capacitor built in motor eliminates need for outside control
Specially developed rotating seal to prevent leakage of oil and entry of water
Sand slinger protects shaft and seal from contact with grit and foreign particles
Specially designed lead seal eliminates oil loss or lead deterioration



GENERAL ELECTRIC ALSO OFFERS 3-WIRE SUBMERSIBLE PUMP MOTORS AND MOTOR PARTS

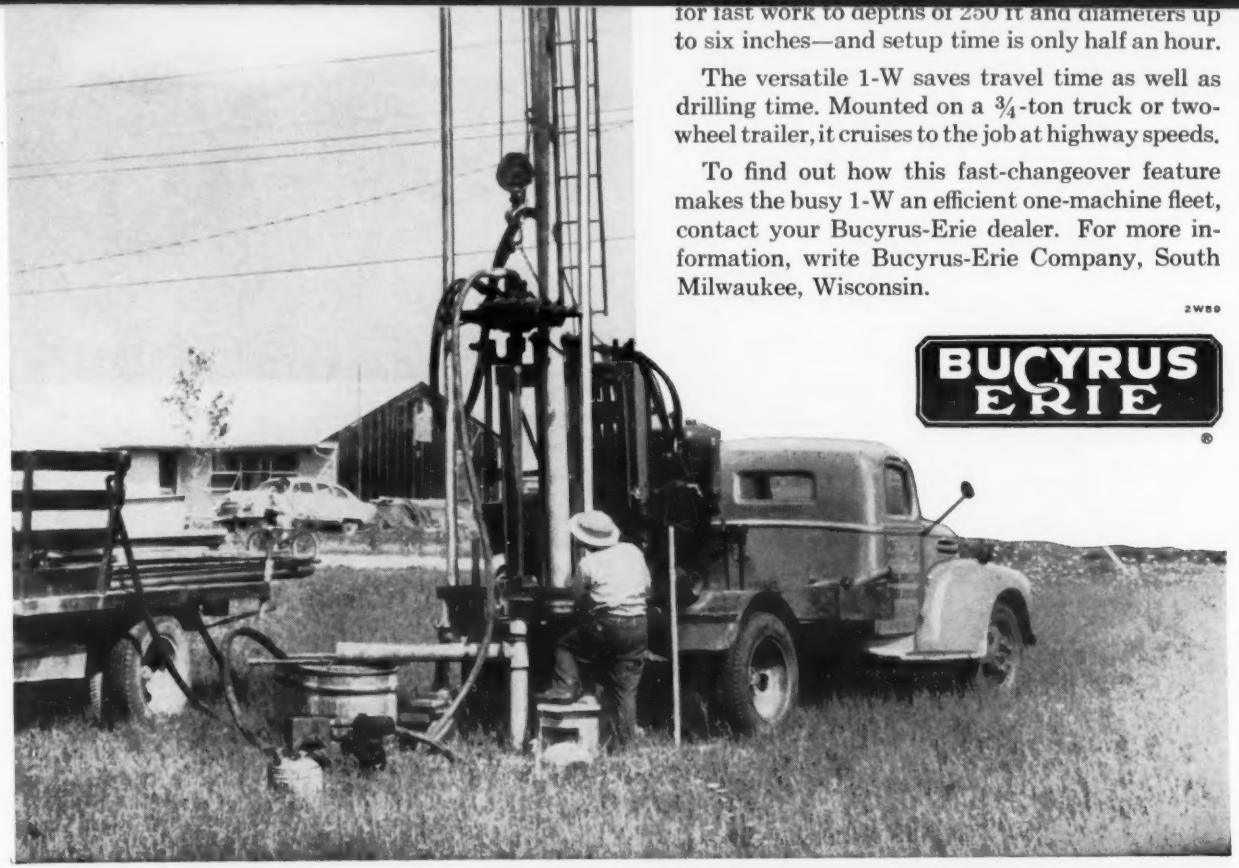
You'll find pumps are easier to sell when they're equipped with General Electric's proved, oil-filled submersible pump motors—available in both two- and three-wire design. Submersible pump motor parts are also available.

What kind of equipment will your next drilling job call for?

Jetting? The Bucyrus-Erie 1-W is your machine. Fifty or sixty feet of four-inch well is a normal two-hour job for the 1-W — and it takes only about ten minutes to set up.

Hollow Rod? Use the 1-W. It not only drills faster than cable tool in sand and clay, it puts down well casing simultaneously. Setup time is only ten minutes.

Cable Tool? Try the 1-W. It will put down a two, three or four-inch hole surprisingly fast... handle up to 500 lb of tools at 225 ft. You can



for fast work to depths of 250 ft and diameters up to six inches—and setup time is only half an hour.

The versatile 1-W saves travel time as well as drilling time. Mounted on a ¾-ton truck or two-wheel trailer, it cruises to the job at highway speeds.

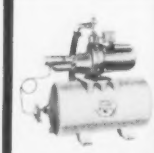
To find out how this fast-changeover feature makes the busy 1-W an efficient one-machine fleet, contact your Bucyrus-Erie dealer. For more information, write Bucyrus-Erie Company, South Milwaukee, Wisconsin.

2W59

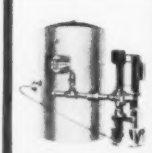
BUCYRUS ERIE ®

McDONALD SERIES 8000
SUBMERSIBLE PUMPS

McDonald Series 4400 Mi-T-Flo Shallow Well Jet System

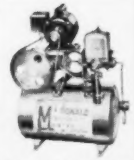


McDonald Model 4500 Century Line Adapto-Jet



McDonald Series 5000 Multi-Stage Pumps

McDonald Deep Well Series 400 – 600 Water Systems



McDonald Series 420 Reciprocating Pumps and water systems

McDONALD

the pumpin'est pumps at the pleasin'est prices

McDONALD SERIES 8000 SUBMERSIBLE PUMPS – for use in 4" wells and larger. Available in ½ to 3 H.P., 8 G.P.M. or 20 G.P.M. Capacities to 1980 G.P.H., depths to 750'.

McDONALD SERIES 4400 MI-T-FLO SHALLOW WELL JET SYSTEM – gives your customers more G.P.H. than any other pump in its price range. Completely packaged on 12, 30 or 42 gallon horizontal pressure tanks.

McDONALD MODEL 4500 CENTURY LINE ADAPTO-JET – provides immediate adaptability from shallow to deep well operation without additional parts. Completely packaged, fully automatic. Three models.

McDONALD SERIES 5000 MULTI-STAGE PUMPS – high capacity shallow well or deep well units. Capacities to 2500 G.P.H. 1 H.P. (2 stage), 1½ H.P. (3 stage).

Deep well: Capacities to 525 G.P.H. ¾ H.P. (2 stage) and 635 G.P.H. 1 H.P. (3 stage).

McDONALD DEEP WELL SERIES 400 –600 WATER SYSTEMS—for use where total suction lift is greater than 25'. Series 400 — 4" stroke — 160 to 684 G.P.H. Depths to 350'. Series 600 — 6" stroke — 200 to 858 G.P.H. Depths to 350'.

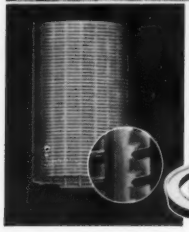
McDONALD SERIES 420 RECIPROCATING PUMPS AND WATER SYSTEMS—for use where total suction lift does not exceed 25'. 115 volt, 60 cycle, single phase, capacitor motor with automatic overload protection. Sizes 1/6 and ¼ H.P. Capacities 250 and 350 G.P.H. Pressure 20-40 lbs.

A.Y. McDONALD MFG. CO.
Dept. D460, P.O. Box 508
12th & Pine
DUBUQUE, IOWA
Pumps • Brass Goods • Oil Equipment • Drains

DOWN she goes!

All brass and 2 feet wide, this 20-foot Cook Strainer is being lowered into a 125-foot well at a large Kentucky distillery. A No. 30-slot, Wire Wound Strainer was specified for this job by the Diehl Pump & Supply Co., Louisville.

Over the long-pull, this well will **continuously** deliver silt-free, sand-free water at the rate of 750 GPM. The Cook Strainer's exclusive V-shaped, self-cleaning slot makes dependable performance like this possible. Larger inside than out, the V-shaped slot prevents clogging—guarantees maximum delivery by filtering out silt, alluvium, clay, and fine sand from around the outside of the strainer. The result—maximum development with a free, **unobstructed** flow of water, for years to come. Investigate for yourself the advantages of Cook Well Strainers. They are available in Wire Wound and Brass Tube types, with slot sizes as required, in all standard diameters.



Made from Red Brass, Silicone Bronze, Armco Iron, and Stainless Steel. 8 to 24 hour delivery often possible by telephoning Cincinnati, HUmboldt 1-8800.

COOK WELL STRAINER CO.

6330 Glenway Avenue • Cincinnati 11, Ohio

WORLD'S LEADING NAME IN WELL STRAINERS

The FIRST Major BREAKTHROUGH!

in Submergible Pumps

The REDA "X-4" / "X-7"

For 3-inch Wells

BREAKTHROUGH! to the 3-inch well market formerly the exclusive field for old type pumping equipment.

BREAKTHROUGH! well codes preventing installations of submergibles in 4-inch wells.

BREAKTHROUGH! to greater sales and wider markets for submergible pumps.

BREAKTHROUGH! to more water at lower cost compared to other types of pumping equipment.

Now owners of 3-inch wells, formerly restricted to old style pumping equipment, can enjoy the advantages of a modern Reda Submergible Pumping System. For the FIRST time submergible pumps are available for wells with less than 4-inch diameter — here are the new "X-4" and "X-7" for 3-inch wells. This is the first major breakthrough in submergible pumps since the Reda Pump Company introduced the first submergible motor-pump unit for a 4-inch well.

SELECTION CHART

Model 312X7050 and Model 314X4050 — ½ H. P. — 115 V — Single Phase

DISCHARGE PRESSURE	PUMP TYPE	HEAD FEET												
		20	40	60	80	90	100	110	120	130	140	150	175	200
		GALLONS PER HOUR												
0	X-4					455	435	420	400	375	355	335	270	180
	X-7				630	605	575	550	520	485	445	390	240	
20	X-4		460	425	390	365	340	315	290	265	225	190		
	X-7	665	620	565	500	460	415	360	335	240				
30	X-4	460	420	380	335	310	285	255	220	180				
	X-7	605	550	490	395	340	280	210						
40	X-4	435	375	330	275	245	210	165	120					
	X-7	550	480	390	270	200								
60	X-4	310	250	180										
	X-7	345	210											

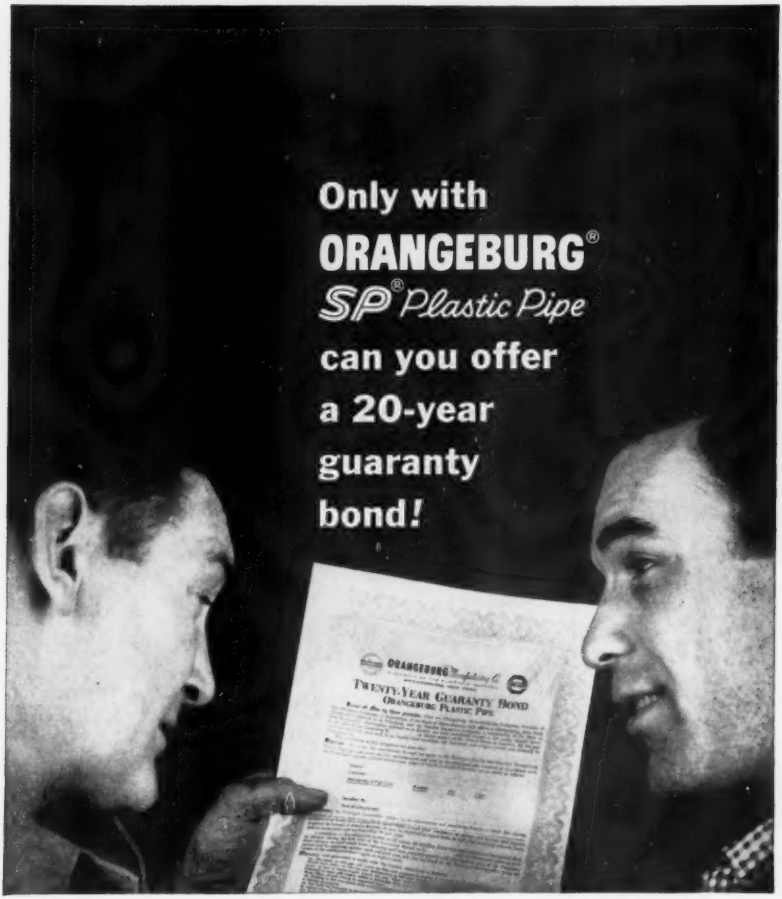
SIGN OF QUALITY SUBMERGIBLE REDA PUMPS

PIONEER AND LEADER OF THE FIELD

REDA PUMP COMPANY

BARTLESVILLE, OKLAHOMA

Manufacturer of Submergible Electric Motors and Pumps for Over 35 Years

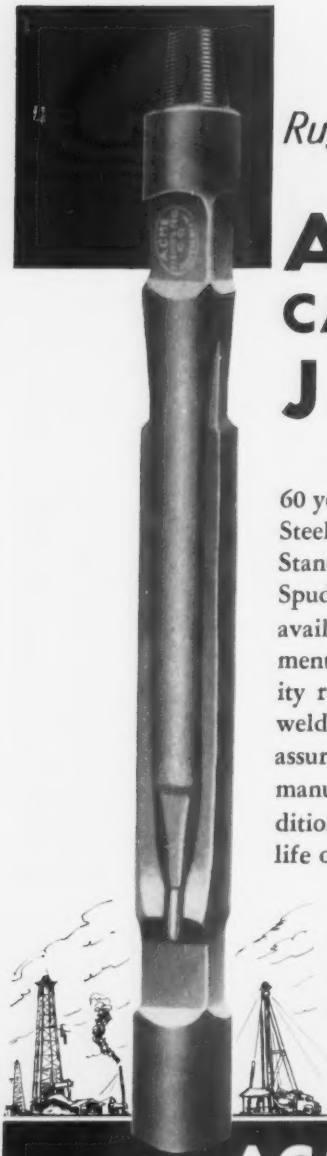


What a selling plus! And what a wonderful way to be sure of satisfied customers! Point out *you* use *slit-proof* Orangeburg *SP*—the only plastic pipe Guaranteed and Bonded for 20 years for cold water service. *Under terms of the Bond, repairs or replacements* (INCLUDING LABOR COSTS) *due to failure of the pipe will be made at Orangeburg's expense.* The Bond will be made out in your customer's name; for him to keep. After your *SP* installation is completed simply mail *"Request for Bond"* Form to Orangeburg. After approval, Bond will be sent direct to your customer. Why not take advantage of this amazing Bond offer on your next job. See your Authorized Orangeburg Wholesaler or write Dept. D-40.

Approved for drinking water by National Sanitation Foundation

ORANGEBURG MANUFACTURING CO. • Orangeburg, New York

A Division of The Flintkote Company, Manufacturers of America's Broadest Line of Building Products



Rugged and Dependable

ACME (REGULAR) CARBON STEEL JARS

Today's Well Driller can profit from the 60 years that Acme has been producing Carbon Steel Drilling Jars. From the old days on the Standard Rig up until now on the modern Spudder, Acme has always meant the best available. Continuing research and improvement have produced the Acme premium quality regular forge welded jars of today. Every weld is precision inspected by Magnaflux to assure a perfect product. Up to the minute manufacturing, heat treating, and surface conditioning facilities, greatly increase the service life of Acme Jars.

First choice of most drillers — for 60 years

ACME warrants all its jars for a specific amount of wear

No time limitation on the WARRANTY

ACME FISHING TOOL CO.

DEPT. 25 • BOX 860 • PARKERSBURG, W. VA.

—SOLD THROUGH DEALERS EVERYWHERE—

UNIVERSAL

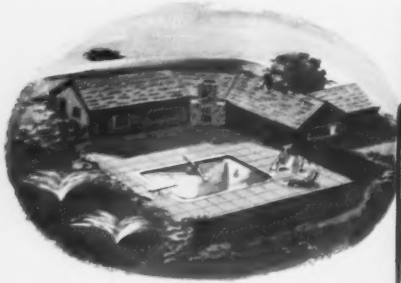
SUBMERSIBLE PUMPS

THE UNIVERSAL SUBMERSIBLE

. . . built for *future* satisfaction

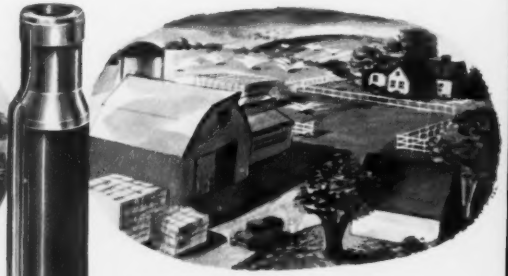
The finest submersible pumps are built by Universal . . . also one of the oldest manufacturers of submersible pumps in the western world. These 100% American made pumps are representative of the quality for which Universal has become famous. The generous use of long-life bronze and stainless steel wherever wear or corrosion might be expected gives added years of trouble-free service to Universal Submersibles. The expert engineering design for Universal submersible pumps sets a new high for efficiency.

For whatever use the pump is needed — if the well is deep and you want lots of water — the sound investment is a Universal Submersible. The *price* you pay for a pump will be forgotten soon after it is installed, but the *performance* of that pump will be remembered for many years to come — every time you turn on a faucet. Be sure of *future* satisfaction. Install a Universal.



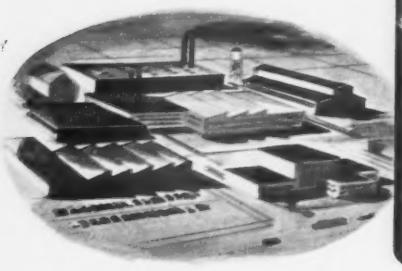
FOR SWIMMING POOLS, SUBURBAN HOMES

Universal Submersible Pumps provide plenty of low cost water for residential and commercial swimming pools, motels and suburban homes requiring high pressure water for many labor-saving conveniences.



FOR MODERN FARMS, IRRIGATION

Around the barnyard, for poultry and livestock, dairy, and dozens of cleaning chores, Universal Submersibles provide all the water needed . . . plus supplying plenty of water under pressure for sprinkler irrigation and household requirements.



FOR INDUSTRIAL USE, BOOSTER SERVICE

Factories, foundries, canneries, ice plants, refineries and many other industrial users of water find Universal Submersibles ideal for supplying economical water service. Cities, too, select Universal Submersibles for in-line booster service.

FOR SCHOOLS, GOLF COURSES

Universal Submersibles provide unexcelled water system service for rural schools . . . and inexpensive high pressure water for golf course sprinkler systems. Housing tracts may be serviced with one or more Universal submersible pump installations.

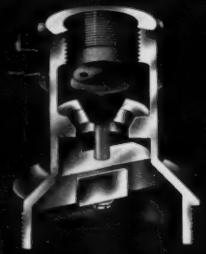
UNIVERSAL
SUBMERSIBLE PUMPS
SUBMERSIBLE PUMPS
MAKE IDEAL
WATER SYSTEMS
The entire pump unit is placed below the ground. Pressure tank may be located in basement or other convenient location away from well site. Service line to tank may be installed below ground level to protect from freezing and heat.
EASY TO INSTALL even on crooked wells.
NO LUBRICATION REQUIRED since pump is water lubricated.
ECONOMICAL TO OWN — more water per horsepower!
The pump you don't see... you don't hear.
Truly, out of sight... out of mind!
WARRANTY
Every Universal Pump is fully warranted as to workmanship and materials, and for satisfactory performance in all specified ratings.

QUALITY FEATURES of the . . .

UNIVERSAL

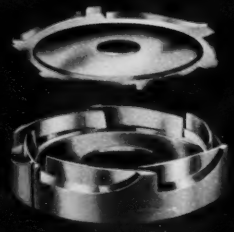
SUBMERSIBLE PUMP

Every submersible pump built by Universal is given careful . . . and admirable . . . attention to detail. Finest stainless steel and bronze parts are machined, polished, inspected and assembled with meticulous care by skilled craftsmen. Finished pumps are tested and closely checked for performance. Into these pumps go a number of quality construction features which are exclusive with Universal and are patented . . . proud products of Universal engineering leadership.



DISCHARGE CHECK VALVE

Hard rubber valve is metal reinforced for strength and is conical shaped for smooth, quiet action. Construction of this valve incorporates a stainless steel guide which prevents rotation or vibration for added valve life.



BRONZE IMPELLER STAGE

Long-life bronze impeller stages are of two-piece construction and are expertly designed to properly channel the water from one impeller to the next higher impeller with maximum efficiency. Each piece is accurately machined for

conical shaped for smooth, quiet action. Construction of this valve incorporates a stainless steel guide which prevents rotation or vibration for added valve life.

tion and are expertly designed to properly channel the water from one impeller to the next higher impeller with maximum efficiency. Each piece is accurately machined for perfect alignment inside the pump case.

BRONZE GUIDE BEARINGS

The pump case is fitted with guide bearings to hold the pump shaft in perfect alignment. The guide bearing housings are constructed of accurately machined bronze castings. The pump shaft is fitted with a bronze replaceable sleeve which turns in a stainless steel bushing inside the guide bearing housing.

CAST BRONZE IMPELLERS

Each cast bronze impeller is machined, polished and balanced, and is held securely to the shaft by a stainless steel key. This key arrangement locks the impeller firmly to the shaft without use of set screws. Close tolerances between the shaft, the key and the impeller eliminate any vibration that might cause wear on internal Submersible parts.

BRONZE PUMP CASE

Case is constructed of seamless brass tubing for greatest strength and corrosion resistance. Micro-tolerance broaching assures perfect straightness of the case and provides absolute alignment of all the internal submersible pump parts.

STAINLESS STEEL SHAFT

Only the highest quality stainless steel is used for the Submersible pump shaft. The shaft is centerless ground to guarantee perfect straightness and roundness. Hence, the shaft runs without whip or vibration, assuring longer bearing life. The shaft itself is over-size for added years of uninterrupted service.

Metal of the Ages BRONZE

During the Stone Age early man learned how to shape stone for his weapons, tools and utensils. Then came the Bronze Age. Man had found pure copper too soft for his tools, and he gradually learned to combine small portions of other metals with the copper to make an alloy, "bronze" — a metal of extreme durability and strength, capable of great resistance to friction. During the Bronze Age, unlimited uses were found for this hardy metal. It was used in the making of armor and the tools necessary for self preservation. Bronze was used in making the great and ageless bells still found in the mighty cathedrals of the world. Sculptors favored enduring bronze for their great works of art. Early bronze contained 67% to 95% copper.

When the Machine Age dawned, it was valued bronze that became the most widely used metal for everything from bearings to drive shafts. Nothing was found to surpass bronze for resistance to corrosion and wear. Many manufacturers have substituted plastics to replace the bronze parts of their machinery due to the high cost of more durable bronze.

Universal Mfg. Co. has long been known for its *quality* pump equipment, and much credit must be given to the generous amounts of long-life bronze found in Universal Pumps. Wherever it can add to the life of a pump, bronze is still used. Substitute plastics won't do. The bronze alloy used by Universal engineers — 85% copper, 5% tin, 5% lead, and 5% zinc — has been found by many metallurgists to be the most hardy for water pumps.

Although the price has increased over the years, Universal Pumps continue to be made with great quantities of bronze — the metal of the ages — because *Quality is our Product.*

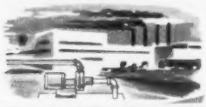
OTHER UNIVERSAL PRODUCTS

TURBINE PUMPS

A wide assortment of sizes and types of turbine type pumps are made by Universal. Inexpensive package turbines are available for 4 and 6-inch wells, as well as conventional deep well turbine pumps for irrigation or industrial water supply.

CENTRIFUGAL PUMPS

Universal makes a complete line of centrifugal pumps, including pumps for air conditioning, hot water circulating, high pressure service, industrial water supply and irrigation. Special pumps are available for handling brine and chemicals.



SUMP PUMPS

Besides the popular column type basement drainer, Universal makes the newest design submersible sump pump for homes, stores and industrial applications. In addition, large non-clog industrial sump pumps and tailwater pumps are available from Universal dealers.

MULTI-STAGE, HIGHER PRESSURE JET PUMPS, TOO

STAR line

Premium Quality Pumps for Deep and Shallow Wells

Dealerships Available • Write for Details

UNIVERSAL MFG. CO.

Factories at RICHMOND, CALIFORNIA • BERKELEY, CALIFORNIA
ST. LOUIS, MISSOURI • TORONTO, CANADA • MONTERREY, N.L., MEXICO
Branch Offices in all Principal Cities
Address factory office nearest you or write Universal Mfg. Co., Richmond, California

Plastic Pipe ad with no picture?

Why no picture?

A picture can be deceiving. Almost all plastic pipe looks the same... some even looks like metal pipe. The difference is a matter of service ...and piping that goes wrong can be mighty expensive. A picture means nothing... but...

There are scores of brands of plastic pipe on the market... made of many different kinds of plastic materials... wonderfully improved over the early plastics. All are labeled "rust resistant"... but total results may be good, bad, or indifferent depending on the choice you make. Here's what to look for:

The universal material? No such thing. No one plastic (no *metal*, for that matter) can handle *all* liquids... no one has all the properties required of a truly universal pipe. Closest to it are Ace Riviclor (Rigid PVC) and Ace-Ite (ABS rubber-plastic blend). Riviclor is a little better on chemical resistance, and Ace-Ite is a little better on impact strength and heat resistance. Both cost about the same, are rigid, and come in 20′ lengths. Ace Supplex (Polyethylene) is flexible; comes in 100′ to 400′ coils. All are OK for drinking water and also for chemicals used in treating water. Of course they're immune to rust, rot, soil and electrolytic corrosion.

Are plastics fully approved for drinking water? Yes... the National Sanitation Foundation at University of Michigan attests with this seal that they regularly test Ace Riviclor, Ace-Ite, Ace Supplex and certain of our other brands of plastic pipe, and certify them non-toxic. These materials are odorless and tasteless as well as non-toxic.

Are plastics strong enough? Hundreds of water works and thousands of chemical plants (all very critical people) say *yes!* Plastic pipe is now available in several wall thicknesses for working pressures to 490 psi. It takes plenty of hard knocks, and resists accidental cutting and damage quite satisfactorily.

Where do I use it? For wells and farm water systems. For construction job water lines, industrial piping, mine drainage systems. For lawn and golf course sprinklers... recirculating water lines in air-conditioning. We've supplied miles of pipe for successful installations. If you haven't yet put some underground for test, it's time to start. Nothing takes the place of *personal* experience.

How can I dodge the pitfalls of "trial and error?" Go to a company that has no axe to grind... a company with the widest experience. We, for instance, supply eight different kinds of pipe... with fittings and valves to match. For truly unbiased advice... backed by 100 years of experience... and prices as low as you'll find anywhere... come to American Hard Rubber Company.

★

Write John R. MacKay, 200 East 42nd Street, New York 17, N.Y. for literature kit ARS-1; most complete information available from any manufacturer. No cost or obligation.

ACE Rubber & Plastics Equipment

by **AMERICAN** Hard Rubber Company

division of **AMERACE** Corporation

Here's a driller who believes in keeping up the appearance of his equipment. He knows good looking rigs can be . . .

Rolling Billboards

By HARRY J. MILLER

Florida driller Frank A. May poses before a small part of his equipment fleet. He's been contracting around the Tampa area for more than 40 years.

"A SPIC and span drilling rig is a rolling billboard," declares veteran contractor Frank A. May of Tampa, Fla. May, together with his son Jack, heads a Florida water well drilling firm now entering its fifth decade of business.

Frank feels a driller's most vital asset is good equipment that is kept good looking. Add to this the Mays' reputation for fair dealing, which lands numerous jobs without the need of advance estimates, and the net result is a well drilling enterprise conceded to be the largest in Tampa.

"It pays to plow some of your profits back into your equipment," says this veteran contractor. "A driller should take pride in the appearance as well as the efficiency of his equipment in order to attain maximum performance from it. That's especially important when you've got competition snapping at your heels. It's good advertising to keep the rigs clean and painted.

May's rigs are kept spotless with a steam jenny that does an excellent clean-up job, and May avows that good-looking equipment implies decent drilling performance and inspires customer confidence.

Owns Five Rigs

Frank employes five drillers and owns five rigs: A Bucyrus-Erie 24-L, two 22-Ws, a 60-L and an old Armstrong rig that's still in good running condition after nearly 30 years' service.

The Mays drill between 150 and 200 wells a year, most of them for industrial plants. They range from 3 to 24 inches in diameter and bottom

May's older son Jack (above) has followed his father into the drilling business. Younger son Frank, Jr., (below) has chosen a career in engineering.

at depths reaching 1,400 feet. Since starting in business, the firm has drilled between 7,000 and 8,000 wells, including several for customers who have dealt with the Mays for years.

Prices in the Tampa area vary, but generally 6 to 8-in. wells bring about $600. One recent May job amounted to $22,000. It involved drilling a 16-in. irrigation well to a depth of 1,000 feet and installing a 1,600-gpm capacity turbine pump.

Most competition the May firm encounters is in the domestic field. Frank deplores the price cutting practices of some drillers who "are working for about the same prices prevalent 30 years ago. Some of them furnish casing on a 6-in. well for as low as

(Above) May checks with driller John Williams on progress of 8-in. well for a Tampa laundry firm. (Below) Frank checks drilling action of his old Armstrong as it sinks well for citrus grower.

$3 a foot," says Frank. "Our policy is to quote price per foot, plus the cost of pipe and other materials needed, such as drive shoes or extra cuts and threading on casings. The price cutters absorb these expenses and that makes things tough for everybody.

Cause Expense

"The customer is at the mercy of the driller," Frank says. "He is doing a job about which the average person knows little. Because of this, it is possible that unethical or poor drilling practices may escape observation, only to return and cause expense later.

"An improperly seated casing is a good example," he explained. "It might produce clear water for a time. The driller gets paid for his work, but eventually the faulty workmanship will show up. Surface water may leak down alongside the casing and contaminate the well, or a turbine pump may tear out prematurely—just to mention a few things that can and sometimes do happen."

Because of his insistence that the customer be satisfied, May would rather forego a profit or even take a loss than have ill feeling between the customer and the firm. As a consequence, the goodwill gained over the years earns the firm such choice jobs as the one on which Frank drilled 18 wells for a single customer. These ranged from 12 through 24 inches and were drilled for one of the world's largest citrus fruit packing firms.

Another large contract called for a series of five wells spaced 10 feet apart in a straight line. May also installed the pumps, which operated off electric motors ranging from 30 to 300 hp. Oddly enough, Frank went down 70 feet for four of the wells, but the fifth had to be drilled 450 feet.

This is the steam jenny Frank uses to keep his equipment looking like new.

Geological formations in the Tampa area make well-drilling a challenging problem, says May. There are pockets of quick sand and flint strata so hard that it will cut glass. Usually, the flint shows up at depths of 80 to 200 feet. It averages a foot to 15 feet thick. Seldom in uniform layers, the flint appears often in a boulder formation, and economy in getting through it calls for the use of explosives.

"There's a possibility you can get through the flint, but sometimes it's better to begin shooting right away or else figure on hanging around the job a month," said May. "You know

The job of putting down three 12-in. wells for a Tampa fruit process plant is being handled by Mays' 60-L. It's shown here far along on the first of them.

Driller Bob Kelly welds coupling onto section of pipe to be used in casing the processing plant wells. Below, Kelly checks weld before pipe is pounded down.

when you've hit flint by the fast dulling of the bit, and you can tell when the drill has slipped by how it falls."

To store his dynamite, Frank erected a building on a swamp site 50 miles from his shop. He brings the explosives in over back roads for safety's sake and to bypass heavily traveled traffic arteries.

"Sure, we could have built it closer and cut out some miles of extra travel, but we wanted to avoid safety hazards," said Frank. During his long drilling experience Frank has acquired special respect for explosives. He will never handle dynamite when a thunderstorm is expected, for example.

"On the job, when placing the electric cap in the fuse, we prefer a wood stick to a metal one for setting the cap in the dynamite stick.

"The hole must be made right inside the dynamite and not in its side. When the charge is lowered, the driller should see that it is tied snugly

so it won't fall off the lowering wires and lodge in the hole. If it does, then you have to lower a second stick and hope it will set off the first one."

A plumb casing is a fetish with the Mays, and when blasting is prohibited at the well site, the drillers use these tactics:

"Say we're to put down a 6 or 8-in. well in a flint-ridden area," says Frank. "Since we want a straight hole so the casing will go down and seat right, we start a 16-in. hole, working our way down gradually and using suction bailers to lift the flint off the bottom. It's heavy stuff—sometimes mixed with gummy limerock and clay."

May never puts non-welded pipe in the ground. After threads are cleaned and pipe sections are screwed together, the joints are welded. May has had couplings drive over when pounded down, due, perhaps, to flaws in pipe metals. Now May's drillers butt the pipe ends together, weld, grind the weld down, then put a collar (a 4 to 6-in. wide piece of ⅜-in. steel) around the joint, pull the band up tight and then weld again.

Couplings are used on 3 to 12-in. pipe. Above the 12-in. size, a band costs less than a comparable coupling, according to May.

Portable Welders

A light, portable welder accompanies every drill rig. These machines are not kept on the rigs but are taken to the job in a service truck. Each night they're returned to the shop, safe from possible pilfering at a lonely and distant well drilling site.

As for losing tools, May feels prevention's the thing. "Drillers must watch cables and tools for signs of

Frank adjusts flow of water being pumped from nearby lake into May-drilled "relief" well. Scheme lessens danger of lake overflowing during rainy season.

wear, like bad threads and other visible weaknesses. Sure, some imperfections may escape notice, but it's easy to make a quick critical examination before lowering tools down a hole. Anything less is just asking for trouble.

"A good driller will stay out of fishing trouble; a poor driller will always be in trouble because he's doing something wrong all the time!" May declares. So Frank's drillers try hard to shy away from fishing problems.

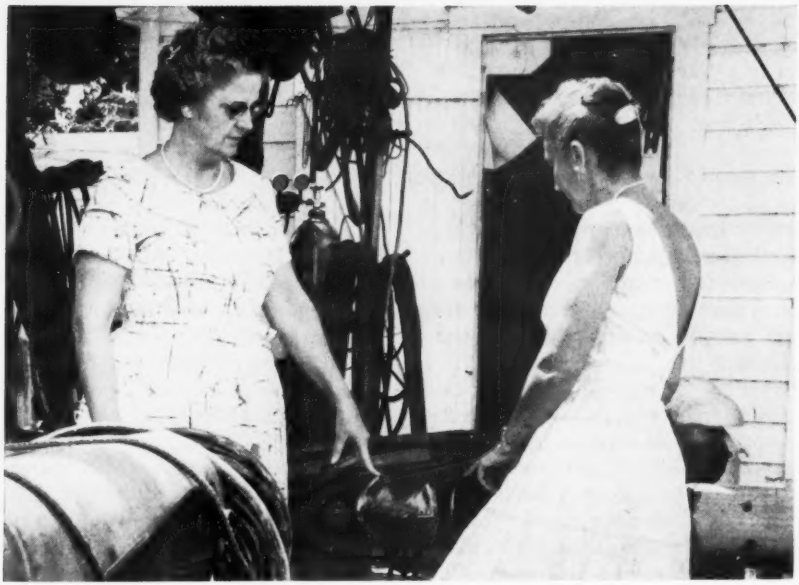
Buys Tools

May is opposed to fabricating tools in his shop. "That's best left to the manufacturers," he says. "I feel our time and money is better spent buying fishing tools and parts from people who know how to make them. The tool manufacturers have got the bugs ironed out, and they have the technical know-how to supply the driller with better equipment than he can contrive in his own shop," declares this seasoned driller.

In addition to drilling domestic and industrial wells, an avenue of profit for the Tampa firm has been drilling hydraulic elevator shafts. These holes run from 20 to 50 feet deep.

A standard drilling rig can't get in close enough on crowded construction sites to do this type of work. To overcome this difficulty, Frank removes the derrick from a Bucyrus-Erie 22-W with the aid of cranes working on the construction job. The stripped

Mays' do lucrative business erecting windmills for farm pasture wells. Below, Frank inspects the gear drive on one before it goes out for installation.



Mrs. Frank May (left) explains to this customer how tough flint rock like that encountered in putting down her well quickly dulls bits and boosts drilling costs.

rig is backed into position adjacent to the elevator shaft site, then the crane lowers the derrick for remounting on the rig and the drilling begins.

"It's a slow and tedious process," says Frank, "but it pays off."

Despite the popular notion that wind-driven pumps have vanished from rural America, May does a lucrative business installing windmills for pasture wells. The unit comes to May in pieces and is partly assembled at the shop before it is hauled out to the well site.

"We save a lot of time that way," says Frank, "because if bolt holes, for example, don't line up or some part needs a bit of alteration or fabrication to suit the particular job, it's easier to do the work at the shop than to lug shop equipment out to a farm."

After arrival of the unit at the farmstead, the drillers lift the assembled windmill up with the drill rig. Most of these windmill units are 20 to 22 feet high. Their popularity in Florida stems from the fact that wind velocities are almost always sufficient to lift water from the shallow wells.

There's an odd paradox in the Mays' business. While the prime objective of most drilling is to get water for the customer, the Mays are presently involved in drilling wells to get rid of water.

Rains have been so heavy in the low-lying Tampa area, and with runoff high and static level high, the water has been invading streets and homes, and overflowing lakes have added to the water damage.

"Right now we're pumping water out of a lake into a 6-in. well 1,265

(Continued on page 64)

Emergency Electric

By L. D. MEEKER

United States Motors Corp.
Oshkosh, Wis.

ELECTRIC power today is so widely distributed that few homes are without it. In fact, most families depend upon electricity to furnish them not only lights but heat and water as well.

There has been a growing awareness in recent years of the need — particularly in suburban homes and on farms — for individual standby electric power systems. The imminent threat of a nuclear attack probably has been the greatest single factor focusing attention on this need. Then too, suburban home and farm owners are being made more conscious of the gap a standby emergency system can fill when power failures result from bad weather or from other hazards to which country power lines are susceptible.

Provide Energy

The importance of a well contractor who installs pumps and water systems to have a working knowledge of standby electric power cannot be overemphasized. In the case of a national emergency, he would undoubtedly be called upon to come up with some kind of water supply for surburban home and farm owners, particularly his customers. A standby power system could simplify the problem and at the same time provide the home or farm owner with much needed energy for lights, heat and refrigeration, among other things.

Ideally, a standby system should be included in the construction plans of a new home or one that is being modernized. Working with the electrician, the well contractor can suggest the proper size of standby equipment, the best location for the plant itself, the best location for the fuel tank and the location of the exhaust line.

Here are the factors which control the type and size of the engine generator:

(1) Voltage, frequency (usually 60 cycles) and phases — the usual service to the house is either 120 volts, 2 wires, or 120/240 volts, 3 wire, both single phase.

(2) The nature of the load — this includes lights, number and total wattage; motors, the watts or kva each draws when starting and while running; other load, like that used for heating or cooking.

Nameplates on the stove or electric water heater usually give the load in watts, kilowatts or in amperes. Change amperes to watts by multiplying by the volt. For example, 5 amperes (amps) at 115 volts equals 575 watts, or .575 kva on alternating current.

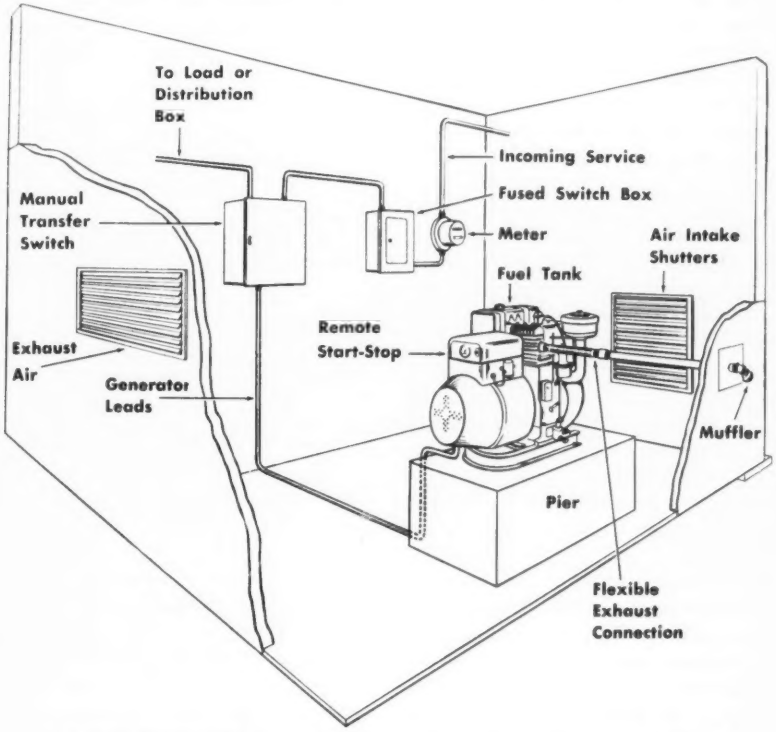
If ratings for all electric appliances are added to ratings for the motors and lights, a figure will result which is the total connected load. This figure is much higher than the standby generator needs to produce because all lights are generally not on at one time and all motors do not run continuously. In an emergency, the mo-

Power for Pumps

tors can even be started manually, with one or two being operated at once, depending on the size of the standby plant.

An easy way to determine the electric plant size is to list all parts of the load, with the watts drawn marked against each part. When the motors are written down there should be two columns, one for starting watts or kva, the other for running watts or kva. Underline or mark in some way those items which are to operate in the emergency. Add together all the emergency items, using the running load of the motors. This total tentatively sets the kilowatt (1,000 watts) rating of the generator. Choose the next larger electric plant rating, to have a small safety factor and to permit the addition or more load at some later time.

In the upper left-hand corner on page 34 is a box which illustrates how generator size can be conveniently determined. It is obvious that in this case a 5,000 or 6,000 watt plant would be much larger than needed.



This is an illustration of a typical emergency electric power installation. Generator need not be mounted on pier unless there is danger of water flooding the area.

Determining Generator Size

	Total Watts	Emergency	Starting	Running
Lights	2,000	400	400	400
Refrigerator	350	350	750	350
Attic vent. fan	350	No	—	—
Oil burner	625	625	1,250	625
Coffee percolator	600	No	—	—
Vacuum cleaner	300	No	—	—
Total	4,225	1,375	2,400	1,375
Plant size indicated	5 to 6 KW	1,500 watts	2,500 watts	1,500 watts

The 1,500 watt unit will carry the emergency load of 1,375 watts, after the motors are running. With 400 watts of lights and the refrigerator running, total 750 watts, the starting load of the oil burner, 1,250 watts, would be too great — 750 plus 1,250 equals 2,000 watts. However, with only a few lights, 200 watts, the oil burner would start and the rest of the lights could be used. Or, with the oil burner running, the refrigerator would start with 100 watts of light being used.

Final Determinant

The choice of a 2,500 watt unit would be preferred here since it would permit the *careful* use of all the appliances, together with the use of a few lights. It is the *starting* load of the last motor to start, with all the other load in use, which is the final determinant.

A rule-of-thumb which helps determine generator size when motors are the principal load is this:

One horsepower of motor load requires 2 kilowatts of generator capacity. When the generator sizes approach 50 kw, this can be shaded. A 50 kw generator will handle 30 hp in motors, depending to some degree on the nature of the device to which the motor is connected.

In selecting a location for the emergency plant, one should:

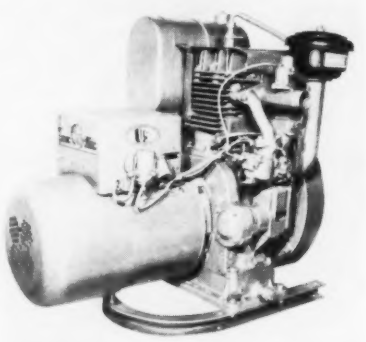
(1) Choose a spot as clean as possible.

(2) Locate as near as possible to the incoming line panel with the main switch and fuses or circuit breakers and the meter.

(3) Be sure there is good ventilation. An air-cooled engine is preferred. Keep in mind that plenty of air for combustion is needed.

(4) Run the exhaust line outside. Direct it away from doors or windows into which the exhaust may be blown by a breeze. Keep the line high enough so gases will pass over the head of anyone who might walk by if there is frequent use of the passageway. Protect the end so that rain will not enter.

(5) Install a double-throw switch so that the incoming line is on one throw of the switch and the emer-

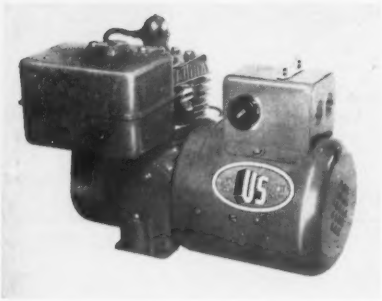


Installations that might require heavy-duty service for long periods would require 115 or 115/230 volt, single phase, AC stationary engine generators like the type pictured above.

SINGLE PHASE MOTOR CURRENT AND POWER REQUIREMENTS

Motor Horse-Power	Motor Type	Starting Load Full Voltage 115 Volts		Running Load Full Load 115 Volts		Generator Size Required 115 Volts	
		KVA	Amperes	KVA	Amperes	Generator KVA	U.S. Model
¼	Spl. Phase	2.8	24.0	0.65	5.6	1.25	1025GA36
¼	Capacitor	1.7	15.0	0.65	5.6		
¼	Repulsion Induction	1.4	12.0	0.65	5.6		
⅓	Spl. Phase	3.2	28.0	0.74	6.4	1.5	105GA36
⅓	Capicitor	2.0	17.6	0.74	6.4		
⅓	Repulsion Induction	1.6	14.0	0.74	6.4		
		230 Volts		230 Volts		115/230 Volts	
½	Capacitor	3.6	15.6	1.0	4.2	1.5	105GA36
½	Repulsion Induction	2.9	12.5	1.0	4.2		
¾	Capacitor	4.6	20.0	1.2	5.3	2.5	205GA36
¾	Repulsion Induction	3.7	16.0	1.2	5.3		
1	Capacitor	5.8	25.0	1.5	6.5	3.5	305GA36
1	Repulsion Induction	4.6	20.0	1.5	6.5		
1½	Capacitor	9.0	39.0	2.1	9.2	5.	5TH18
1½	Repulsion Induction	7.1	31.0	2.1	9.2		
2	Capacitor	11.7	51.0	2.7	12.0	7.5	705VE18
2	Repulsion Induction	9.4	41.0	2.7	12.0		
3	Capacitor	16.0	70.0	4.0	17.8	10.	10VF18
3	Repulsion Induction	12.9	56.0	4.0	17.8		

United States Motors Corp.



Smaller 115 volt, AC engine generators can handle 1,500 and 2,500 watt requirements.

gency generator on the other. A power company will not approve an installation where the emergency generator could possibly be connected to their lines. Men working on a supposedly dead line could be injured, and the plant itself would be overloaded by all the other loads on the same circuit.

The "normal source" contacts on this transfer switch must be large enough to carry the normal load. They should be the same rating as the main switch contacts.

(6) Install a fuel tank large enough to run the plant several hours. The location of the tank must conform to fire department regulations, if they apply. Fuel consumption figures on each size plant are given in technical literature by all manufacturers. Average is 4 to 5 kilowatt hours per gallon of gasoline.

If there is a supply of natural or manufactured gas, or if LP gas is available, the engine can also be hooked up to operate on either of these fuels.

Should the best location available for the plant be one in which there is excessive dirt, cover the unit to protect it. Run the unit every week or so for 10 minutes, or longer in the winter when there is condensation of gasoline in the crankcase. Operating at frequent intervals insures that the plant will start when needed, and it keeps the cylinder walls covered with oil which improves compression and makes the unit easier to start.

Location below ground is not good. A leak in the exhaust line, even though this may lead out-of-doors, will permit carbon monoxide, a constituent of the exhaust, to accumulate, perhaps to a dangerous point. Since this is colorless and odorless, it can collect in sufficient amounts to be dangerous for someone exposed, even for short periods.

As has been mentioned, the generator must have the same electrical characteristics as the regular power source. The engine may be either air or liquid cooled and with a 2-stroke or 4-stroke cycle.

List Advantages

Advantages of air cooling for the small units, such as would be used in the average home, are freedom from freezing in winter and the necessary use of anti-freeze. Pumps that require water will leak when the seals become aged and radiator hoses must then be replaced. Passages in the radiator frequently clog up with dirt. Air-cooled engines are rugged, will stand abuse and can be serviced by dealers in almost every town, both large and small, with a minimum of expense.

For the applications under consideration, small units, 2,500 or 3,500 watt, would be sufficient, except for the large homes, farms, restaurants or country clubs. These would need 10 kw to 25 kw, depending on the size of the establishment. These units

(Continued on page 64)

THIS **Logical** QUESTION COMES FROM USERS OF
JOHNSONITE PLASTIC PIPE

Johnsonite Poly-Hi Pipe is NSF Approved — Guaranteed to meet U. S. Standard (S-197-59)

It wasn't easy. But Johnson Plastic, the leader in developing many improvements in plastic pipe — does it again! By taking fullest advantage of the exciting development of a new, but tested and proved high density — 100% Linear resin, Johnson now offers its Poly-Hi **Flexible** Plastic Pipe — a grade of **Flexible** pipe vastly superior to the past premium grade Polyethylene Pipe — yet at a reduced price!

HERE'S WHAT THE NEW JOHNSONITE POLY-HI OFFERS YOU —

1. A plastic pipe that is fully flexible!
2. Increased tensile strength!
3. Higher resistance to heat and chemicals!
4. Mirror-like smoothness of inner and outer surfaces!
5. A full, no-red-tape-no-certificate-needed guarantee against stress cracking or pin holing when used at recommended pressures and temperatures!
6. Greatly increased resistance to aging!
7. A harder — more dense surface that defies abrasion and skuffing!

AND YOU GET ALL SEVEN OF THESE IMPROVEMENTS — THESE ADVANTAGES — AT A REDUCED COST — A COST FAR LESS THAN THAT OF CONVENTIONAL POLYETHYLENE PIPE!

Write asking for full details and cost-saving prices, today.

JOHNSON PLASTIC CORPORATION
CHAGRIN FALLS, OHIO

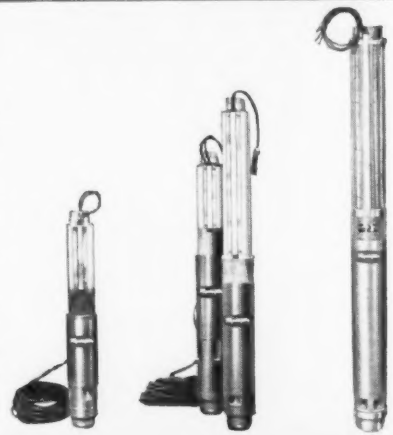
THE SECOND OLDEST COMPANY EXTRUDING PLASTIC PIPE

The No. 1 PUMP SOURCE *for both* SUBS *and* JETS!

Rapidayton has precisely the subs you need for greatest volume and profit in *your* area, regardless of the competitive situation.

1. The Rapidayton 2-wire 3 STAR and 5 STAR—the world's most competitive 4″ models—for upgrading jet pump sales and getting into the booming sub market quickly.
2. The complete Rapidayton 4″ Dolphin* line of both 2-wire and 3-wire models for widest selection and maximum volume and profit
3. Rapidayton 6″ Dolphins for the highly profitable commercial, industrial, and institutional jobs.

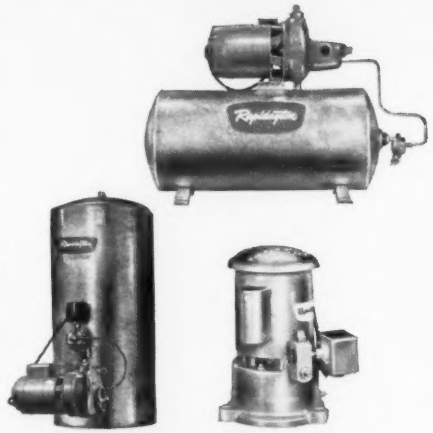
Rapidayton subs are equipped with Tait's own superior "plus power" oil-filled motors, designed to meet the specific needs of the pump. Exclusive two-piece stator construction permits use of more copper and insulation. Pump's exclusive stage design, incorporating nylon and stainless steel, offers maximum abrasion resistance.



Tait is the only pump manufacturer that can supply you with *everything* you need in jets as well as *everything* you need in subs.

1. The Rapidayton JETSTAR* line—for high quality at low cost. America's No. 1 competitive jets. No short cuts in construction or elimination of essential features. Here's a line with which you can build both volume and profit, insure complete customer satisfaction, and cut service to a minimum.

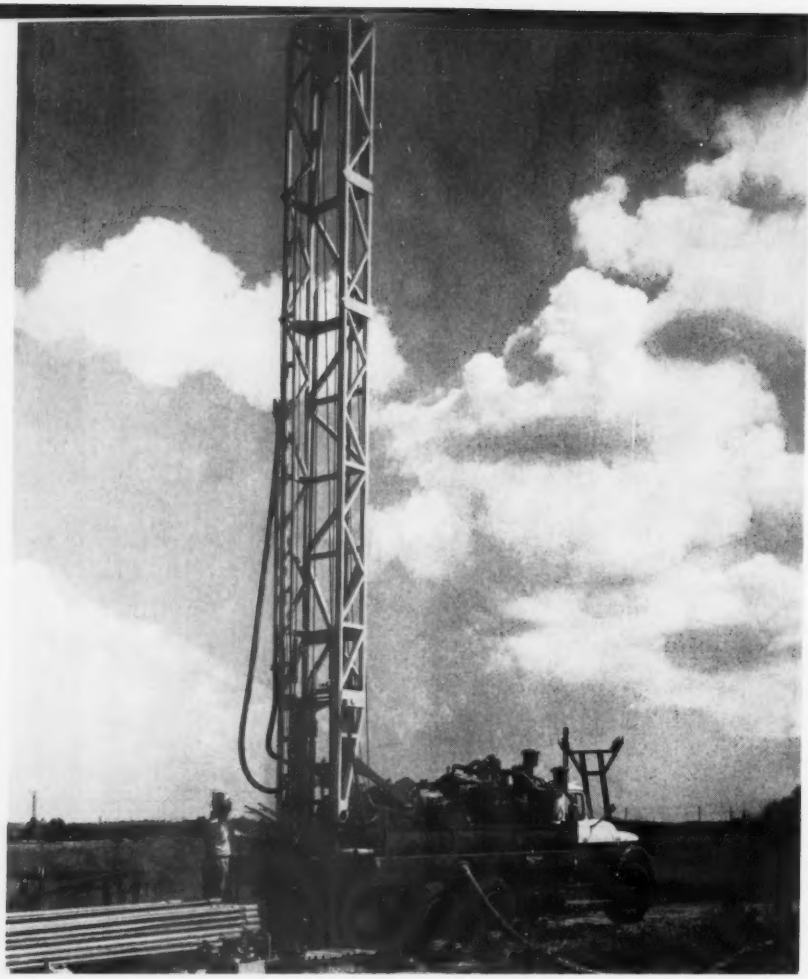
2. The famous Rapidayton CHAMPION* line—for maximum volume and profit. These pumps represent a *supreme quality* which has all but disappeared from competing pump lines. For unmatched performance and longer, trouble-free life, install Champions.



These two Rapidayton jet pump lines give you the widest possible selection and enable you to make maximum profit from a simplified inventory tailored to your exact needs. Shallow well, convertible, and vertical models. Single stage, multi-stage. Three tank types.

Rapidayton

division **The Tait Manufacturing Company, Dayton 1, Ohio**



This new mud-air rotary is designed to drill water wells to depths of 1,000 feet. It features a retractable rotary table with 4-speed forward and reverse drive.

Compact Rotary Announced By Bucyrus-Erie

A NEW rotary well drill is about to come off the production lines of Bucyrus-Erie Co., according to a recent announcement from the firm. It is the Model 10-R — a truck-mounted, combination mud-air rotary drill designed to handle water well drilling to depths of 1,000 feet. It features a retractable rotary table with 4-speed forward and reverse drive, plus a big capacity sand reel.

Designed small and compact, the new drill is ruggedly built and incorporates such heavy-duty features as:

Steel mast is hydraulically operated. It is made of square tubing and can be used with 15-ft. sections of drill pipe.

A Beco-built split-type power take-off with individual friction clutch drives for all main machinery; a double-drum draw works with sturdy, long life brakes and clutches; and a sturdy pipe storage rack.

Mast Extention Available

A continuous-type chain feed pull-down, powered through a dual range hydraulic system, affords infinitely variable pressure control on the bit. The steel mast, constructed of square tubing, is hydraulically raised and lowered and can be used with 15-ft. long sections of drill pipe. A 5-ft. mast extension is available as optional equipment to handle 20-ft. pipe.

In line with the 10-R's modern design, all controls have been placed

(Continued on page 68)

The 10-R folds down into a compact over-the-highway unit. Its length is 28 feet 5 inches (standard mast), its width 8 feet and traveling height is about 11 feet.

News of the month

B-E Well Drill Distributor Adds Oklahoma Territory

Turner's Drillers Supply, Inc., Albuquerque, N. M., a Bucyrus-Erie drill distributor in New Mexico and western Texas, has been appointed exclusive distributor for Bucyrus-Erie oil and water well drills in Oklahoma and has opened a branch office and supply store in Okmulgee, Okla. The new territory they will serve includes the state of Oklahoma, except Ottawa County and the Panhandle counties of Beaver, Texas and Cimarron.

From its Okmulgee branch, Turner's Drillers Supply, Inc., will offer sales and service on a complete line of Bucyrus-Erie water and oil well spudders — including the models 20-W, 22-W, 60-L, 28-L and 36-L cable tool rigs and the 4-way combination 1-W. They will also handle the sale of 30-R truck-mounted rotary and down-the-hole combination drills for water well drilling.

The new branch will carry a complete line of B-E tools and parts, as well as wire line, manila rope, hand tools, casing, paint, gloves, pipe wrenches and other drilling and welding supplies.

Charles R. Turner, vice-president of the recently-incorporated supply organization, is in charge of sales for the Oklahoma territory. The branch office and store are located at 205 North Alabama in Okmulgee.

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THE DRILLER

Thank You

Pump Association Holds Chicago Meeting

Progress of the National Association of Domestic and Farm Pump Manufacturers' 1960 sales promotional program was reviewed at a meeting held recently at the Drake Hotel in Chicago, Ill.

Promotion of May as the 12th annual National Water Systems Month — and of the week of May 1 to 7 as National Pump Display Week — was outlined to the members by Frank Hickey, chairman of the association's general planning committee.

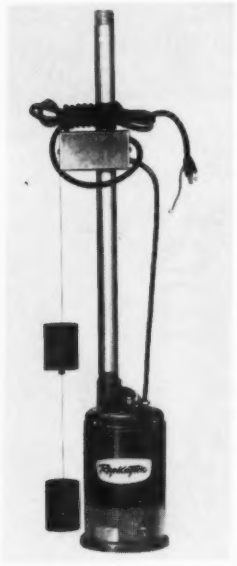
Distribution March 19 of a special newspaper page to 14,000 publishers, editors and advertising managers of daily and weekly papers across the country will begin to focus attention on National Water Systems Month. The page tells how papers can tie in with this promotion program and offers suggested themes for advertising, as well as sources for features and mats.

A second step in exciting wide use of National Water Systems Month promotion, Hickey revealed, is a kit for dealers. It includes a year-round

display streamer; a four-page, two-color dealer instruction folder with suggested displays; a folder which tells about the certification program and the assocation's seal; and a booklet that states the case for private water systems. There are also prepared news releases and radio spots.

The association also heard reports on interviews with public health and institutional officials who had stated their opinions concerning the central water system versus the individual system. After this, the meeting was divided into small groups which discussed methods of getting the story for individual systems across more effectively.

Tait Broadens Submersible Cellar Drainer Line



The Rapidayton division of the Tait Mfg. Co. has broadened its cellar drainer production by introducing two all-new, low-cost submersible cellar drainer lines in ¼, ⅓, ½ and ¾-hp sizes.

Known as the Rapidayton Turbo-Drainer models, they feature an exclusive new water-cooled motor. Water is discharged up and around the motor throughout the complete cycle of the pump, regardless of the depth of water in the sump.

High head characteristics enable the ¼ hp model to pump 1,700 gph against a head of 15 feet and the ⅓ hp model to pump 2,400 gph against the same head. Effective capacities for all four models at heads to 30 feet.

All models are equipped with Tait's double-pole switch in which the mechanical and electrical functions are completely separate, which the company claims adds to the dependability and long life of a pump. The switch is mounted on the discharge pipe so that cut-in and cut-out can be varied to reduce cycling.

Two complete turbo-drainer lines are made: standard brass and deluxe brass. The complete units are made by Tait, including motor and switch.

Further information on the cellar drainer lines can be obtained by writing the Tait Mfg. Co., Dept. TD, 500 Webster St., Dayton, Ohio.

Johns-Manville Purchases Franklin Plastics

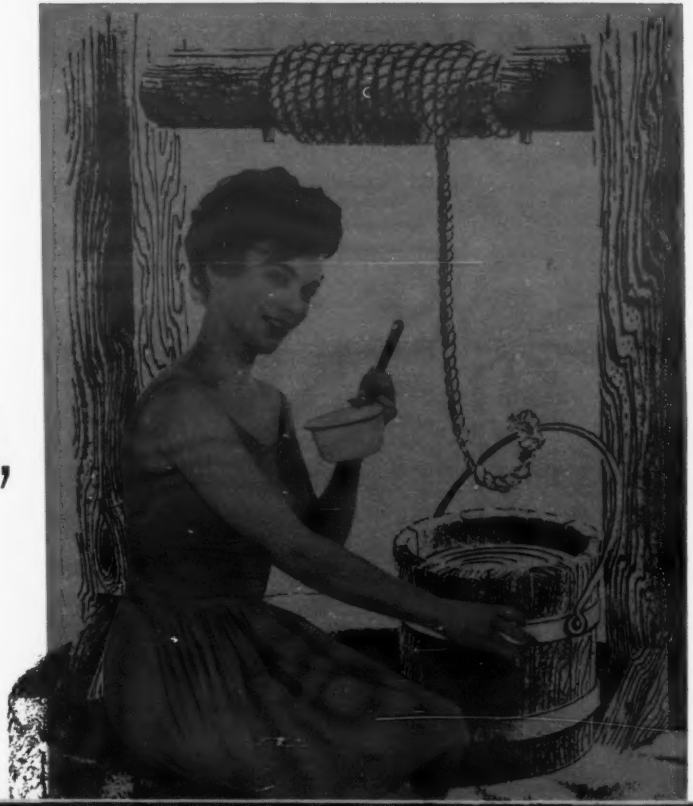
Johns-Manville has entered into an agreement for the cash purchase of Franklin Plastics, Inc., Franklin, Pa., manufacturers and distributors of extruded plastic pipe.

Under the agreement, Johns-Manville will obtain the Franklin's principal assets. Dixon P. Downey, owner and president of Franklin, will continue the operation of Gulf Stream Plastics, Inc., a Franklin subsidiary, at Hialeah, Fla., for the manufacture of fittings for plastic pipe.

Responsibility for producing and selling the J-M extruded plastic pipe line will be assigned to the Johns-Manville pipe division, which also

(Continued on page 52)

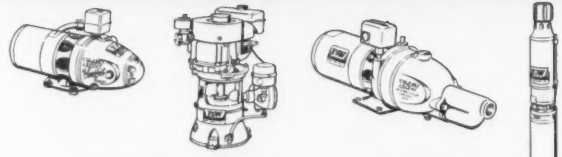
Sales
methods
get
outdated,
too!



sell the profit package by

plus-profits passing you by. Modern-day selling demands not only a complete line to fill every customer need exactly, but up-to-the-minute merchandising! And, that's what the **FLINT AND WALLING "PROFIT PACKAGE"** offers you! Top products, backed by an explosive advertising program and plenty of proven, in-the-store sales helps. A respected name for more than 100 years, **FLINT AND WALLING** assures you of a properly engineered pump and system, thoroughly use-tested; finest that skilled craftsmen working with the best of materials and methods can produce. Look into the **FLINT AND WALLING "PROFIT PACKAGE,"** today! Product and promotion planned to put plus-profits into your pocket! *May we call on you? Please write us.*

FLINT AND WALLING
KENDALLVILLE, INDIANA



a pump for every purpose

from the MAILBAG

This page is open to any of our readers having questions to ask relating to drilling, driving pipe, dressing bits, etc. All letters will be answered promptly by experienced drillers and engineers, who are qualified to give intelligent advice on these subjects. We will publish as many letters of general interest as space will permit. Address: The Driller, South Milwaukee, Wis.

Driftwood Causes Well Development Problem

Gentlemen:

We recently drilled a well near a lake located about six miles northeast of Bloomington, Ill. Formations usual in this area were encountered on the way down—top soil, blue clay and hardpan, which we hit at 115 feet. Drilling through the hardpan, we came upon a 3-ft. thick gravel vein that produced a very strong flow of water. However, there were pieces of driftwood in the vein.

We have come up against driftwood before but never quite like this. Some of the pieces came out in chunks two inches long and one inch thick. They were very well preserved and the "bark" could be readily seen.

We placed an 11 slot Johnson wire wound screen in the well, setting it in the usual way, with the bottom of the screen near the bottom of the vein. We then test pumped the well. After about three hours, the water's static level began to drop; in another hour the well went dry.

We pulled the screen. Wood had completely plugged the slots. We lowered a 25 slot screen into the well, setting it in the same position as the 11 slot screen, the bottom of the screen near the bottom of the vein. We got the same result, except that the well pumped longer before it went dry. Thinking perhaps the wood was at the top of the vein, we lowered the casing two feet. This didn't do any good either, so we pulled the casing and the screen above the bottom of the vein. Results were still negative.

Next, we pulled the screen, bailed the well and poured in pea gravel—about one-half ton of it—never allowing any to remain at a level with the bottom of the drive shoe. We then started test pumping. The engine on our test pump runs four hours on a tank of gas. Between each refill, we cleaned the bottom of the well with the bailer. This went on for five days, at which time there was very little sand coming through the pea gravel. Small pieces of wood, however, were still prevalent. We finally installed a "working head" pump on the well—its foot valve at 80 feet—and the owner started using the water.

The static head of well is 40 feet, lowering to 50 feet when the well is pumped at 8 gpm. The water remains clear unless the well is pumped for long periods; it then takes on a faint reddish tint. There is also a small amount of gas in the well, which becomes more noticeable when the well is pumped hard.

We would appreciate any ideas or advice you might have.

J.D.T. Illinois

Dear Sir:

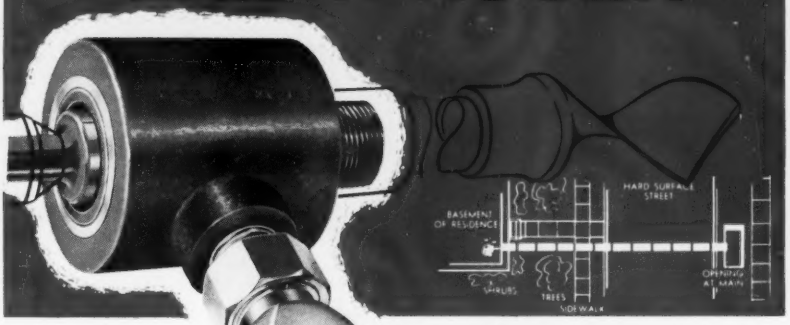
The situation you relate is not unusual. In fact, it is quite common near old lake beds or streams, where driftwood, debris and other such items became buried under tons of rock and earth in ages past and is found remarkably well preserved.

Buried driftwood can be quite a problem to well drillers. Usually, where a condition such as this exists,

(Continued on page 64)

Look at all the advantages of a

"modern" ECONOMY EARTH AUGER



ONLY $49.95

(complete with 2" pilot auger with ½" or ⅝" drive shank)

Under Highways

Under City Streets

Through Orchards

Hand-held MODERN Economy Earth Auger cuts labor costs to minimum; first job usually pays for unit. Drills under shrubbery, lawns, walks, terraces, streets, railroads, highways without damage to property or disrupting traffic.

Features Hydrodynamic Action

Water pressure flushes out dirt loosened by the auger; return auger bits will enlarge hole on return drilling to desired size.

Economical operation for drilling of holes for water pipe, sewer pipe, gas pipe, drainage pipe, electrical conduit, cross country gas lines and communication lines.

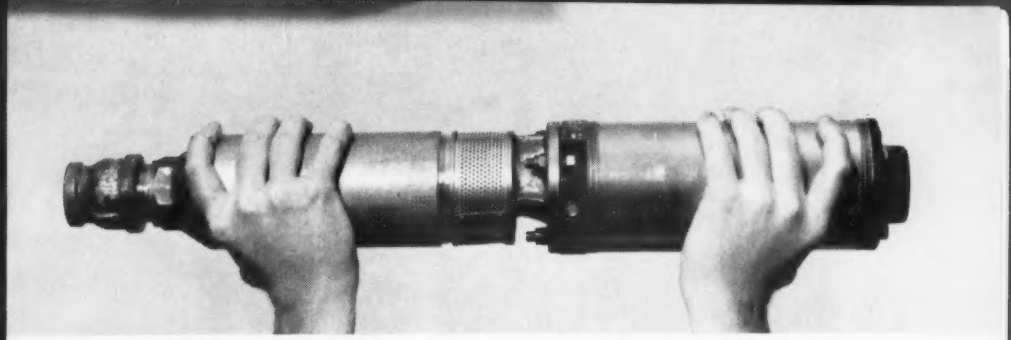
Return augers from 4" to 14-inch diameter; extension shafts of 5′ length, ¾" diameter available; any standard length ¾" pipe can be used; prices on request.

Contact your wholesaler or write:

Modern Products, Inc.

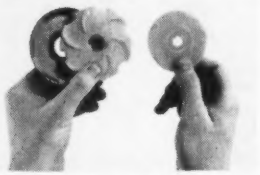
P.O. Box 344 Exeter, Nebraska

"Roesler
"Footsie FROLICS"
"CERTAINLY WAS A ROUGH DAY MAKING HOLE, EH, SAM?"
OIL WELL DRILLER
"WOW! DIG THAT WATER BEARING FORMATION!"
ABC WATER WELLS INC.
"TOUGH OUTFIT TO WORK FOR. - LOOK AT THAT HIGH DISCHARGE FLOW."
PUMPS
WATER SYSTEMS
WELL DRILLING
CLEARANCE 15'10"
"YOU SAID YOU'D BRING IN 100 G.P.M. - IT'S ONLY DOING 99!"
"I DIDN'T LOWER THE DERRICK! I THOUGHT YOU DID!"
"DON'T FOOL AROUND! THAT'S A HIGH PRESSURE SYSTEM!"



7 REASONS WHY THIS PUMP WILL LIVE TO A RIPE OLD AGE

1. Motor lives longer. That's because guide vanes, impellers, and cover plates are made of BYRITE—a special lightweight plastic. Light rotating element needs less power to get it going. Motor starts are easier. Motor strain—and wear—stay at a minimum.



2. Resists corrosion. Water in the pump touches only corrosion-resistant BYRITE parts and stainless steel bowl and shaft.

3. Resists abrasion. Tough BYRITE plus special design of impeller hubs makes the Silent-Flow highly abrasion-resistant.

4. Parts keep their shape. BYRITE parts do not absorb water. They keep their size and shape permanently—and keep pumping efficiency at its peak.

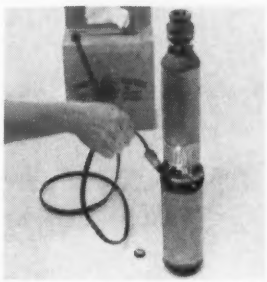
5. More water with less power. Smooth BYRITE surfaces provide efficient water passages that minerals and algae don't cling to. You get more water at high pressure with less power, less motor strain.

6. No vibration. Entire rotating element balances perfectly. Shaft never deflects or vibrates.

7. Hex-a-Drive shaft. Stainless steel, six-sided shaft stays permanently aligned. Gives a positive drive with least possible wear.

New low cost. Miracle-tough BYRITE brings down the price of the submersible *without lowering quality.* That's because this strong, long-wearing plastic costs so much less than expensive special metals.

New drop cable makes installation easier. Three leads in a single cable jacket simplify installation. Just plug it in—no splice to make, no chance of wrong connections at pump end. All controls stay at surface for easy accessibility.



Easy to disassemble in the field. Pump pressure is contained by stainless steel bowl construction, without gaskets, rather than by the casing itself. This allows plenty of clearance between casing and bowls, makes disassembly as simple as taking apart a jet pump.

Complete line of self-timing jets. Shallow-Flow and Prime-Flow jets feature positive self-priming. Available on 12-, 30-, or 42-gal. tank or as basic pumps for use with separate tank.

For information on how Goulds Silent-Flow, and jet line, can help you build a more profitable business, write to Goulds Pumps, Inc., Dept. DR-40, Seneca Falls, N. Y.

GOULDS GP PUMPS

DEEP-SET!

Berkeley Submersibles

Tap the rich 50 to 350 foot market with these profitable new Berkeley subs!

Sell performance that tops the best of the multi-stage jets you've got – offer your customers

like — hermetically sealed motor (nationally known), corrosion resistant intake screen, polished stainless steel shafts plus precision machining throughout. These features are important to you because they mean less trouble, less service calls, and happier customers, too. If you'd like to add Berkeley Submersibles to your line, write for details.

- **4" size**
- **6 GPM to 100 GPM**
- **Pressures to 60 psi**
- **Pumping levels to 1000 ft.**

Ask for bulletin 1205.

Berkeley

Pumps & Water Systems

BERKELEY PUMP COMPANY

827 Bancroft Way, Berkeley 2, California

Factories in: Berkeley, Calif., Atlanta, Ga., Amarillo, Tex., Grand Island, Neb.

News . . .

(Continued from page 43)

manufactures and markets a broad line of asbestos-cement pipe products.

Franklin Plastics, Inc., has been operating in the extruded pipe field for the last six years, producing and selling polyethylene, styrene and ABS (acrylonitrile butadiene styrene) plastic pipe.

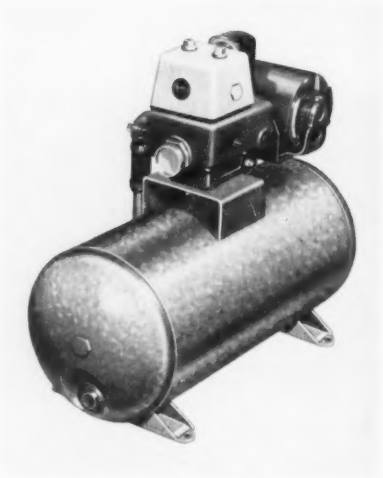
The added manufacturing plant will bring Johns-Manville production facilities in the United States, Canada, Mexico, Great Britain and Belgium to a total of 39 plants and 4 mines.

Barnes Introduces New Reciprocating, Jet Water Systems

Barnes Mfg. Co. has introduced newly engineered and newly designed lines of its shallow well reciprocating and shallow well jet water systems.

The reciprocating line has two models with capacities reaching to 300 gph and 400 gph, respectively. Barnes officials claim they have achieved a new level of smooth, quiet performance in the reciprocating systems.

The new reciprocating models include such performance features as the squeal-proof, no-slip Poly-V-Belt drive and Polypropylene moulded valve deck. Smooth and quiet operation is further assured by the new piston, which is moulded of frictionless Teflon, or rubber—materials remarkably tough but resistant to abrasion.



Barnes' new reciprocating water system.

Rubber valves with pot-type silencers provide precision seating in the moulded valve deck, even when the water is sandy. The new pump is remarkably free from clatter and metallic noise, say Barnes officials. Tough but resilient Teflon, they add, provides the most friction free and long lasting bearing surface for the eccentric, which is coupled directly to the pivoted piston.

Cylinder, eccentric and connecting rod are brass. The heavy-duty housings of these completely packaged units are of cast iron. The entire unit slides out with the removal of but six screws.

The capacitor-type overload protected motors of the reciprocating units are of ¼ hp for the 300 gph model, ⅓ hp for the 400 gph model. A deluxe switch with cleanout orifice assures dependable automatic operation.

The shallow-well jet water system,

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THE DRILLER
Thank You

to be known as the Econo-Pump, incorporates a shallow well ejector for high capacity performance where the suction lift is 25 feet or less. Capacities of the ½ hp and ⅓ hp models range to 525 gph and 900 gph at 10-ft. suction lift.

The complete jet packaged units are designed for simplified servicing without removing piping, according to Barnes. The exclusive baffled air separation chamber and new multi-vane diffuser provide improved, positive self-priming. Increased pumping efficiency of the new Econo-Pump is attributed to a unique U-Cup impeller seal that keeps water from entering the suction area.

Also contributing to the efficiency is a new impeller that combines the friction-free smoothness and toughness of moulded Kralastic vanes with brass shroud and impeller eye. The new injector is of non-corrosive, abrasion-resistant Cycolac, a tough, rigid material capable of withstanding tremendous impact.

Free descriptive literature on both the reciprocating and jet systems is available. Write the Advertising Manager, Barnes Mfg. Co., Dept. TD, Mansfield, Ohio.

Flint and Walling to Exhibit At International Trade Fair

At the request of the United States Department of Commerce, the Flint and Walling Mfg. Co. will exhibit water systems equipment at the International Trade Fair in Milan, Italy. The fair was to be held this month.

Flint and Walling, which has been manufacturing water systems equipment for more than 100 years, will

(Continued on page 58)

NOISELESS
LEAK-RESISTANT
Strataflo
CHECK VALVES FOR SUBMERSIBLE PUMPS
Strataflo has solved the check valve problems in submersible pump installations. The Strataflo Check Valve has a tapered Buna-S rubber poppet which is silicone treated. Opens quickly and easily . . . resists leaking, even if seat is badly scored. Noiseless, sensitive operation. Works in any position. 200 lbs. pressure. No. 351 furnished with one tapped connection, No. 352 (illustrated) with two. Write for Bulletin 102.
Order from your jobber.
STRATAFLO PRODUCTS, INC.
FORT WAYNE, INDIANA
ONE-PIECE BRONZE BODY
Tapped for attaching pressure switch, pressure gauge or snifter valve.
SILICONE-TREATED RUBBER POPPET
NO. 352

BITS *from the wit sharpener*

The driller was a real old timer. Celebrating his 100th birthday, he told a reporter that "I ain't got an enemy on earth."

"That's a very beautiful thought, sir," said the reporter.

"Yup," replied the old man. "Last one died about a year ago."

. "You can't quit now," the circus manager told the human cannonball.

"Where can I find another man of your caliber?"

A man who took great pride in his lawn moved into a new house where there was a heavy crop of dandelions.

After trying every known device to get rid of them, he wrote the Department of Agriculture enumerating all of the things he had tried and ending, "What should I do now?"

The reply from Washington said, "We suggest that you learn to love them."

"Do you still doubt?"

"Hello, honey, I could hardly wait to tell you what's happened. Dad's cut off my allowance, but we can still have fun just . . . Hello? . . . Betty? . . . Hello . . ."

A clergyman and truck driver had an automobile crash. The truck driver told the padre what he thought about him in profane terms. When he paused, it was the clergyman's turn.

"You know, my good man, I cannot indulge in your kind of language, but this much I will tell you: I hope when you go home tonight your mother will run out from under the porch and bite you."

Psychiatrist: "What did you say?"

Driller: "I said for some reason or other people don't like me; pay attention, fathead."

A woman visitor to the city entered a taxicab. No sooner was the door closed than the car leaped forward violently and went racing wildly along the street, narrowly missing collision with a number of things. The passenger, naturally enough, was terrified.

"Please be careful, sir! I'm nervous. This is my first ride in a taxi."

The driver, without turning his head, yelled in reply:

"That's all right, Ma'am. This is the first time I ever drove one."

Wife: "Oh! Henry, the lady next door has a hat just like my new one."

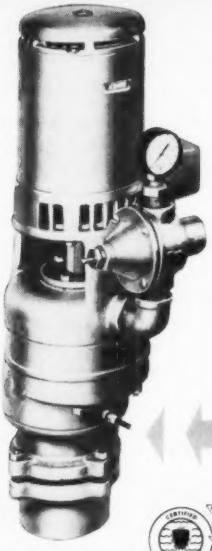
Hubby: "Now I suppose you want to buy another one."

Wife: "Well, it would be cheaper than moving."

You Don't Need a Magician

TO INSTALL THE

AERMOTOR 'MJ' MULTI-STAGE JET DEEP WELL PUMP



Here's Why Installations Are...

Faster Aermotor's exclusive adapters eliminate prolonged piping and fitting. Each and every job is quick, neat and sure.

Easier You pipe directly to the lightweight, easy-to-handle adapter. Pump is bolted to adapter after all piping is finished.

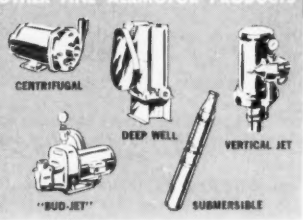
Lower-Cost You save parts and pipe as well as time. Over-well adapters include well seals. Offset adapters have side outlets.

Put away your magic wands, drillers. Aermotor's 'MJ' doesn't need any hocus-pocus to handle those deep wells. Here's reliable power at depths to 200 feet. The 3-stage 'MJ' can deliver 350 GPH operating on a vertical lift of 100 feet against a tank pressure of 80 lbs. Pump is capable of 850 GPH capacities. Available in ¾, 1, 1½ and 2 HP units. Features improved sand guard and positive, non-slip drive impellers.

AERMOTOR — WATER WHERE YOU WANT IT

AERMOTOR COMPANY BRANCH OFFICES:
AMARILLO • CORDELE, GA. • DALLAS • DES MOINES
HARRISBURG • KANSAS CITY • MINNEAPOLIS • OMAHA

OTHER FINE AERMOTOR PRODUCTS



MAIL COUPON TODAY

AERMOTOR COMPANY
2500 West Roosevelt Road, Dept. DR-4
Chicago 8, Illinois

Please send the FREE Booklets checked at right.

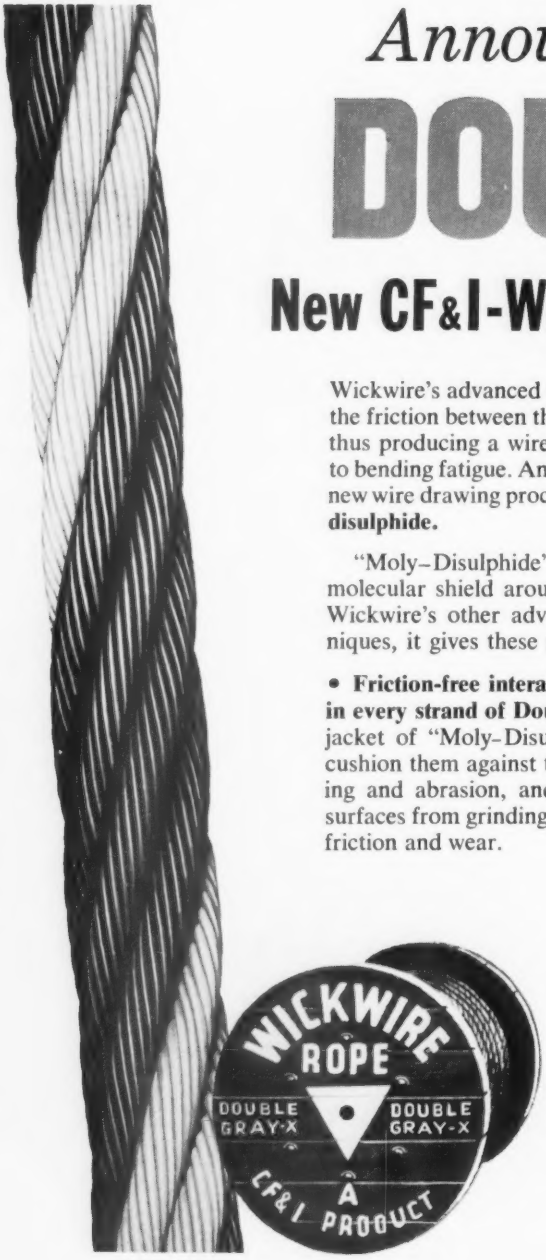
Name_____

Address_____

City_____ Zone____ State_____

CHECK YOUR CHOICE OF FREE BOOKLETS

- ☐ "MJ" Multi-Stage Jet
- ☐ "VJ" Vertical Jet
- ☐ "Bud-Jet"
- ☐ "CH" Centrifugal
- ☐ Deep Well
- ☐ Submersible



Announcing...

DOUBLE

New CF&I-Wickwire Wire

Wickwire's advanced wire drawing process reduces the friction between the wires within the rope itself, thus producing a wire rope with greater resistance to bending fatigue. An important step in Wickwire's new wire drawing process is the use of **molybdenum disulphide.**

"Moly–Disulphide" builds a thin, permanent molecular shield around each wire. Coupled with Wickwire's other advanced wire processing techniques, it gives these results:

• **Friction-free interaction of the individual wires in every strand of Double Gray-X** — A molecular jacket of "Moly–Disulphide" on each wire helps cushion them against the effects of bending, crushing and abrasion, and tends to prevent the wire surfaces from grinding against each other, reducing friction and wear.

GRAY-X

Rope gives longer service life

• **Smoother surface to the wires** — In any wire, tiny imperfections occasionally form on the surface. "Moly-Disulphide" helps eliminate the source of these imperfections which can cause premature breaking of the wires and impair the life of the rope.

• **Higher degree of toughness** — "Moly-Disulphide" greatly minimizes the friction involved in the drawing operation, preventing the wires from "heating up". This assures the correct physical properties for every wire in Double Gray-X and helps the wire retain its original toughness.

Double Gray-X will be made in a wide range of sizes and constructions. It will give greater operating economy and reduced downtime for many types of operations.

EXTRA BONUS—In addition to longer life, Double Gray-X gives you the EXTRA STRENGTH of Double Gray Wire Rope. Made with an independent wire rope core of the same extra high strength steel, it has a 15% higher breaking strength than the catalog breaking strength of an improved plow steel rope with IWRC.

7537-B

WICKWIRE ROPE

THE COLORADO FUEL AND IRON CORPORATION

In the West: **THE COLORADO FUEL AND IRON CORPORATION** — Albuquerque • Amarillo • Billings • Boise • Butte Denver • El Paso • Farmington (N. M.) • Ft. Worth • Houston • Kansas City • Lincoln • Los Angeles • Oakland Odessa (Tex.) • Oklahoma City • Phoenix • Portland • Pueblo • Salt Lake City • San Francisco • San Leandro Seattle • Spokane • Tulsa • Wichita

In the East: **WICKWIRE SPENCER STEEL DIVISION** — Boston • Buffalo • Chattanooga • Chicago • Detroit Emlenton (Pa.) • New Orleans • New York • Philadelphia

News . . .

(Continued from page 53)

exhibit a ⅓ hp Golden Arrow submersible pump with Flintex impellers made of "Delrin" acetal resin by Du Pont, as well as brass impellers and diffusers.

The United State's trade fair program is designed to tell the story of our free enterprise system and to provide effective trade promotion cooperation. To advance these objectives, the Office of International Trade Fairs of the Department of Commerce obtains loans of equipment and technical personnel from American industry for the overseas fairs.

Accessories Brochure Available From Franklin Electric

A new folder illustrates and describes accessories designed as aids for better installation of submersible pumps. Included are noise suppression devices, couplings, lightning protectors, cable termination kits and motor lead drop cables.

Accessories are available from submersible pump manufacturers and their designated distributors or dealers.

The brochure is available on request from the manufacturer, Franklin Electric Co., Inc., Dept. TD, Bluffton, Ind.

Catalog Describes Screen Pipe

An eight-page catalog describing screen pipe for water and other type wells is available from the manufacturer, Emsco Screen Pipe Co., Houston, Tex.

The catalog includes discussions on what Emsco calls "More Area" slotted screen pipe, verticle slotted and drilled hole wire wrapped screen, ribbed-type wire wrapped screen and gravel pack screen.

A copy of the catalog is available from Emsco Screen Pipe Co., Dept. TD, P.O. Box 14446, Houston 21, Tex.

Goulds Announces New Shallow Well Water System

Particularly suited for installations that require larger quantities of water than that normally required for home use — such as lawn sprinkling, garden watering, fire protection, etc. — are the new series GM units just announced by Goulds Pumps, Inc.

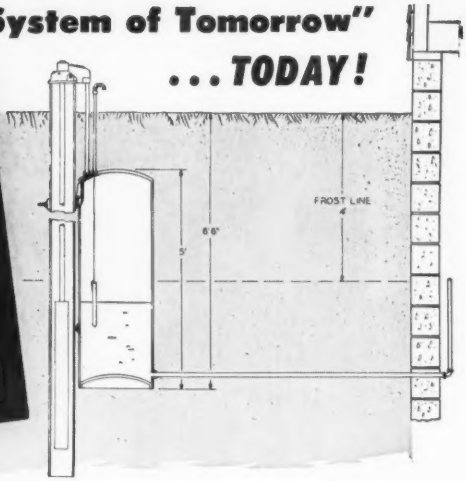
The ¾ hp unit provides capacities to 1,620 gph, while the 1 hp unit gives capacities to 2,180 gph. Both units have all the desirable features of Goulds Jet-O-Matic line, such as self-priming performance, time-tested corrosion resistant finish on all interior services, safe motor loads on all ratings and protected mechanical seal, which cannot be damaged if the pump

(Continued on page 61)

Goulds' GM series shallow water well system.

Sell the "Water System of Tomorrow" ...TODAY!

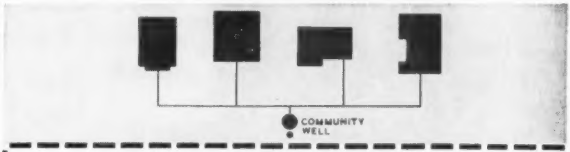
New MORRISON Aqua-Flo WELL-TANK WATER SYSTEM



FIRST All-at-the Well System!

Sell the "nearest thing to central water convenience" for faster profits, enthusiastic customers — with new MORRISON Aqua-Flo WELL-TANK SYSTEMS! New exclusive Well Head Unit permits burying tank *right at the well.* Avoids pressure tank nuisance in the home, avoids pump house or pit, lost space, extra adapters, conduits, extra welding. Well Head Unit fits well casing without welding or cutting, includes built-in check valve, snifter-type air charger, junction box, tank intake connector, thermostatic heater and ports for ventilation and service. You save installation time and labor, do a better job faster.

Check ALL the advantages of the new Aqua-Flo WELL-TANK SYSTEM NOW. Fits well casings from 4″ to 7″ *without adjustment.* Tank sizes, 60, 120 and 265 gallons. Use with submersible pumps. Meets all sanitation codes. Provides a "main" type water system often at savings of hundreds of dollars for your customer.



New Aqua-Flo Well-Tank System simplifies water supply to other buildings.

Be FIRST in your town with the *latest!* Check the Coupon for the whole story.

THE *Morrison* COMPANY

Dept. D, 125 W. Melvina St., Milwaukee 12, Wis.

Quick! Tell us more about the advantages of the new MORRISON Aqua-Flo Well-Tank "Water System of the future."

Name .....

Address .....

City ..... State .....

Attention of .....

Send one of these after that pipe!

RAMPP

FOX TRIP

Casing Spears

For faster, more efficient recovery of pipe use RAMPP Fox Trip Casing Spears. They are manufactured in two, three and four slip design. The three or four slip is recommended as it enables the slips to contact the entire circumference of the pipe and prevents it from becoming elongated.

RAMCO—10752

Write for full information and prices.

RAMPP *Company*

News . . .

(Continued from page 58)

runs dry because of water dropping below foot valve level.

Complete information can be obtained by writing Goulds Pumps, Inc., Dept. TD, 201 Black Brook Rd., Seneca Falls, N. Y.

Deming Creates Window Card, Stuffer on Majorjet System

The Deming Co., Salem, Ohio, has produced for use by its dealers and distributors a three-color window display card and a three-color envelope stuffer, both on Deming's new "Majorjet' shallow well water system.

The window display card (17 x 22 inches) features a complete package Marjorjet water system with galvanized tank, ready for installation. It is made of extra heavy card stock suitable for window or interior display.

The stuffer has illustrations showing Deming's horizontal 12-gallon tank model, its 4-gallon model and its large 42-gallon tank model. The stuffer is packed with other items of value and interest to the consumer.

Both the display card and stuffer can be obtained by writing The Deming Co., Dept. TD, Salem, Ohio.

McDonald Appoints New Central Division Manager

John Vecchio has been appointed manager of the central industrial division of A. Y. McDonald Mfg. Co. Vecchio will be in charge of industrial sales for the 21 branch houses of the firm. He replaces Walter J. Maurer, who has been appointed McDonald's purchasing agent.

Vecchio, 39, has for the past five years been associated with The Crane Co. of Omaha, Neb. While with Crane, he served the firm in its industrial sales division.

"I understand you charge by the foot. Mind using my yardstick?"

Auger Cuts Up To 50% Off Labor Costs

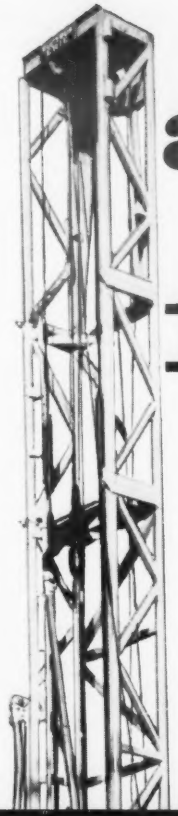
Estimates of labor saving costs up to 50% have been fulfilled by the new "Modern" Earth Auger, claims the manufacturer, Modern Products, Inc., Exeter, Neb.

Powered by either a 3 or 5.75 hp Briggs and Stratton engine, this one-man operated unit will drill horizontal holes to distances of 200 feet or more.

The "Modern" Earth Auger reportedly drills under lawns, shrubbery, walks, railroads, streets, buildings and from one basement to another without disrupting traffic or damaging property. It also drills through frost, hardpan and gumbo.

Portable, accurate and economical, the auger removes loosened dirt by

(Conitnued on page 64)



announcing

THE NEW BUCYRUS-ERIE

10-R ROTARY WATER WELL DRILL

Individual friction-drive clutches for all main machinery . . . double-drum draw works . . . heavy-duty, spiral, bevel gear-driven rotary table with four speeds forward and reverse drive . . . continuous-type chain feed pulldown . . . square tubular steel mast, hydraulically raised and lowered, for use with 15-ft or 20-ft length drill pipe . . . a choice of mud pumps.

These are just a few of the proven Bucyrus-Erie features now available in this compact, highly maneuverable unit — *the new 10-R rotary water well drill.*

Let your Bucyrus-Erie distributor show you this new economy package. See how nicely it fits into the world's most wanted line of water well drills. Or, write for complete information. Bucyrus-Erie Company, South Milwaukee, Wisconsin. 3W60

BUCYRUS ERIE®

...MOST RESPECTED NAME IN THE FIELD

News . . .

(Continued from page 61)

hydrodynamic action—water-flush removal of dirt.

A 2-in. hole can be drilled laterally at the rate of five feet per minute. Return drill bits are available either in 4, 6, 8, 10 or 14-in. diameter sizes.

The power unit is mounted on ball bearing wheels for easy movement along a 7-ft. track. The auger uses 5-ft. sections of ¾-in. pipe in drill stems. Additional 5-ft. sections may be attached for precision horizontal drilling of 200 feet or more.

There is a 90-day service warranty on the auger. More information can be obtained by writing Modern Products, Inc., Dept TD, Exeter, Neb.

Mailbag . . .

(Continued from page 46)

the sand vein is generally thick enough to permit setting the screen below the driftwood.

In your case, our first suggestion would be to move over some distance and drill another hole. If this is not possible, due to some local condition, go deeper in the hope of finding another good water vein free of buried driftwood.

If neither of the above suggestions is feasible, it might be smart to try a coarser screen and develop the well by the gravel pack method.

Presence of gas in the well is doubtless caused by decaying vegetation. The only effective way to eliminate the gas is to go deeper and case it off.

"Well Duncan, I see you've been a real ball of fire during the couple weeks I've been away on vacation."

May . . .

(Continued from page 31)

feet deep on an around-the-clock basis so the water won't inundate the surrounding residential areas," Frank said. "And we drilled a second 6-in. well 1,000 feet deep to drain the area."

The 1,265-ft. well was being pumped in at the rate of 600 gpm, 24 hours a day, for the past six weeks. There's no telling how long May's pump will be on the job. In the meantime he's getting paid by the hour for the pumping job. The well is cased down to 830 feet, to meet state requirements and to prevent contamination of the shallow water.

Frank's son Jack has been active in his father's business since 1953. While in college he worked summers with the drillers. Following a 3-year hitch in the military service, Jack stepped into full-time work in the cherished independence of his father's occupation.

Pump . . .

(Continued from page 36)

might well be fully automatic emergency generators which would start immediately upon failure of normal power and automatically transfer the load to the generator. Although such

an arrangement could be made on units as small as 2,500 watts, the cost of the automatic control and the transfer switch would make it prohibitive for the small home owner.

The majority of water system motors use ⅓ or ½ hp motors. Few exceed 1½ hp. Under ½ hp, the motors are 115 volts, single phase. For ½ hp and larger, they are 115/230 volt, single phase, 3 wire. Under ½ hp, they are usually split phase, over ½ hp, capacitor start.

The table on page 35 lists the motor starting and running currents for the smaller motors and the recommened generator size if the load were a single motor of the rating. The table can be used as a guide where the sum of the motor horsepowers equals those listed.

The illustration of a typical installation on page 33 is idealized a little. It shows the generator set mounted on a pier to raise it above floor level. This is not necessary unless there is danger of water flooding the area. It does make it easier to drain the oil, which should be done periodically without fail.

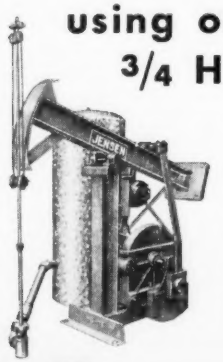
The picture shows louvers in the walls for intake and exhaust air. These would be necessary for a plant which starts automatically. For manual starting, doors or windows may be opened where necessary to provide the needed ventilation.

The pictures of the electric plants show one which is typical of the 1,500 watt, 3,600 rpm models, and is typical of the 2,500 watt, 3,600 rpm unit, also. The other is a 3,500 watt, 1,800 rpm unit. Why the difference in

(Continued on page 68)

Pumps from 1000 feet using only 3/4 H. P.

CYL. I.D.	DROP PIPE SIZE	GALS. PER HOUR	¾ H.P. MOTOR		1 H.P. MOTOR	
			20-40 PRESS.	OPEN DISC.	20-40 PRESS.	OPEN DISC.
1⅜"	2"	105	960'	1050'	1310'	1400'
1⅞"	2"	190	475'	565'	660'	750'
2⅜"	2½"	415	260'	350'	380'	470'
3"	3½"	595	130'	220'	205'	295'



with **JENSEN'S 50-DC**

—thanks to counterbalancing

That's right! From 1050 ft. and using hollow rods you can pump 105 GPH or from 960 ft. with a 20-40 pressure system. Superb workmanship, fine bearings, good lubrication and well-nigh perfect counterbalancing account for this power economy. Check this performance chart—compare it with others! Whether your water well is 5 ft. or 5000 ft.—one of JENSEN'S 15 sizes will deliver more water for less money.

Write for catalog and attractive dealer discounts.

JENSEN WATER SYSTEMS

Made by JENSEN BROS. MFG. CO., INC., Coffeyville, Kansas

BARGAIN *counter*

All advertising in this section is payable in advance. Rates and conditions subject to change without notice. Enclose your check or money order with copy. Rate: $1.00 per line. Minimum charge $4.00. No discounts; no commissions. Count your own copy to avoid delay. The average line contains 28 characters. Count spaces and punctuation as one character each. Allow two lines for box number if blind advertisement is desired. Closing date —5th of preceding month. Example — June issue closes May 5th. Be sure to address separate inquiries to each advertiser by using the correct box numbers. Mail Box inquiries care of THE DRILLER, South Milwaukee, Wisconsin.

DRILLS FOR SALE

Keystone 70 for mounting on truck. Equipped with telescoping mast, rubber shock absorbers, tool guide, blower and good power unit. Price, $1,000 F.O.B. North Branford, Conn. Located at Gill Drilling Equipment Co., Inc., North Branford, Conn. Contact above or C. K. Parkhurst, Jr., 13 Glenwood Rd., Denville, N.J.

G. Pech irrig. well drilling machine with 48″ turntable, 35′ mast, hyd. lift, 275′ 6″ col., 36″ bit. Rig mounted on K7 IHC truck; driven by 2 M&M engines and a Cat D2 engine w/66″ hyd. dozer battery starter. Engine only 2,200 hrs., just overhauled. Contact Fillmore County Imp. & Irr. Co., Geneva, Neb.

1955 Bucyrus-Erie 22-W complete with catheads, casing hoist, self starter, rubber sheaves. Machine mounted on good 1954 Ford truck. This machine has not drilled many wells and is in excellent shape. Price with cable and truck, $4,900. String of 5″ tools available at extra cost.

22-W with casing hoist, electric starter and 36′ derrick. Mounted on good Ford truck. Price, $3,500 with cable. Wilson & Beemer Supply Co., Albert Lea, Minn. Phone: FR 3-6412.

Bucyrus-Erie 29-W, semi-trailer mounted. Equipped with casing reel, rubber sheaves, cathead and Buda gasoline engine. Price, less tools and lines, $4,000. Complete drilling and fishing tools for 6″ wells also available at extra cost. M. W. Ives & Son, Rt. 202, Mt. Ivy, Pomona, N.Y. Phone: HAverstraw 9-5268.

1—#42 air cylinder spudder mounted on 10-wheel army truck. Excellent condition. Kenneth H. Alpaugh, Lebanon, N. J. Phone: Lebanon 136.

1949 22-W mounted on '52 Studebaker, 38′ power derrick, Hercules engine, starter, spooling device, casing reel, 750′ ¾ and ⅜″ cables. Good condition. Price, $4,200.

#5 Keystone, all steel, semi-trailer mount with landing gear, 38′ solid mast, B-E derrick head and clutches, 700′ ¾ and ⅜″ cables. Suitable for 20″ holes, 1,000′ depth. 48 D.T. truck, steel drop center bed, reasonable.

Tools, 4 to 10″ A.P.I. standard joints, 1⅝ x 2¼, 2 x 3 and 2¾ x 3¾. Write for listings.

1,500′ new Nat. tube; random lengths, seamless 6⅝ OD x .280 wall x ASTM 53, Black-plain, ends beveled; bids considered. Prentice Drilling Co., E. Lincoln Hwy., DeKalb, Ill.

1—Bucyrus-Erie 22-W with casing reel and power hoist. Mounted on truck and ready to drill. Has 500′ of ¾″ drill cable, 500′ of ⅜″ sand and casing line and 6″ tools. Can be purchased with or without truck. Frank Rondano, Inc., 882 E. Main St., Torrington, Conn. Phone: HUnter 9-6457.

1—Model 53 Keystone, new clutches. Mounted on a good GMC, ready to go. $2,800.

1—33-W, a good hole maker. Mounted on a good GMC. $2,500.

1—Homemade rig for 4″ Can't beat the drilling action. Trailer mounted. Pulled with a 1-ton Dodge flat truck. $1,000.

1—Pippin backhoe with Wagner end loader. Mounted on a Furgason 35 tractor. $3,000. Drilling tools from 4″ to 10″, reasonable. D. R. Crittendon Drilling & Supply Co. Phone: Union, Ill., 3101.

1 — Bucyrus-Erie 20-W mounted on 1950 Dodge truck with two-speed axle. Has 6″ drilling tools and cables. Machine and truck in A-1 condition. This machine is three years old but has been operated only one year. Contact: Harvey Acker, Big Bend, Wis. Phone: MO 2-2710.

Keystone all steel spudder on K8 Int. 40′ mast, 55 hp Oliver engine, tool guide, blower, derrick hoist, 3-speed Cotta industrial transmission. Spools 2,000′ line. Excellent shape, overhauled and painted. With or without complete tool string, lines.

Custom built jetting rig mounted on 1952 L162 Int. Capacity to 400′. Ehmke Well Drillers, Silver Creek, N.Y. Phone: YE 4-3830.

1—B-E 21-W in A-1 condition. Has catwalks and 34′ one-piece derrick with shock absorber. Mounted on Studebaker truck in good condition. Machine has 600′ new ⅝″ drilling cable, 500′ used ⅜″ sand line and 6″ tools. Price, $2,250. F.O.B. Milwaukee, Wis. Accurate Well & Pump Co., 4107 No. Bartlett, Milwaukee 11, Wis.

1—Model 42 Cyclone equipped with telescoping derrick and Continental engine. Rebushed and repainted.

1—Model 71 Star mounted on Int. truck. Machine rebuilt and repainted.

1—Model 21-W B-E equipped with 4-cylinder Wis. engine. Machine mounted on 1946 GMC truck. Rebushed and repainted.

1—Model 21-W B-E equipped with LeRoi engine and mounted on Diamond T truck. Machine and truck repainted. Complete with string of 6″ tools.

1—1955 model 20-W B-E mounted on 1951 Chev. truck. Machine equipped with starting equipment and blower. Both machine and truck repainted.

1—1955 model 20-W B-E, not mounted. Machine equipped with casing reel, tool guide and starting equipment. Repainted.

1—1953 model 20-W B-E, not mounted. Machine equipped with casing reel, catheads and starting equipment. Repainted.

1—1957 model 20-W B-E mounted on 1946 Chev. truck. Machine equipped with casing reel, spooling device, tool guide and full starting equipment.

1—1954 model 20-W B-E mounted on 1949 Ford truck. Machine equipped with casing reel, tool guide, and starting equipment.

1—Model 44 Cyclone, not mounted. Machine equipped with 6-cylinder Continental engine, approximately 500′ ¾″ line.

1—1957 model 28-L B-E equipped with 6 MZA Waukesha engine, tool crane, casing block, casing line, guy lines, rubber sheaves and blower. Machine is trailer mounted.

1—1948 model 36-L B-E, tandem mounted, equipped with 140 GK Waukesha engine and tool crane. Machine rebuilt and repainted.

1—Model 72 Star mounted on FWD truck.

1—1954 model 22-W BE mounted on a 1946 KB-6 Int. truck. Machine rebushed and repainted.

1—1948 model 36-L B-E, trailer mounted, equipped with 140-GK Waukesha engine and tool crane.

1—1948 model 28-L B-E equipped with 6 MZA Waukesha engine, trailer mounted, and tool crane. Buckeye Supply Co., Box 1231, Zanesville, Ohio.

DRILLS FOR SALE

1—Combination reverse and straight circulation rotary rig. Rig will drill test holes, water wells and large dia. reverse holes. Change-over made in minutes. 6″ stem included. Price, $6,500. Ewbank & Sons Drilling Co., Fairview, Okla.

20-W Bucyrus-Erie drill, serial #75849, without casing reel but with power derrick hoist and spooling device. Mounted on 2-ton 1950 Chev. truck with dual rear wheels. With tools for 6″ holes. Has drill and sand lines. Truck and drill in good condition. Clarence Acker, 3934 S. 41st St., Milwaukee, Wis. Phone: OR 2-5667.

Mayhew 1,000, 5½ x 6 pumps, $4,750. Franks long mast and kelly, $3,750. Failing 1500, complete. Drill pipe, core barrels, hex, kellys. Rotary percussion tools, $1,500. Fred Butler, Box 481, Pueblo, Colo. Phone: LIncoln 2-7616.

22-W B-E, complete, excellent condition. Tools, wrenches, blocking. Mounted on 1½-ton Chevrolet, engine machineshop reconditioned. Homemade house-trailer included. Price, $5,000. Reason for selling: business is going in the hole. Tasker's Inc., Northwood, N.H. Phone: WIlson 2-5581.

Bucyrus-Erie 20-W mounted on '39 Chevrolet truck. Complete with tools, 5 and 6″ bits. Other equipment of J. T. Wright accumulated in a lifetime of drilling also available. Contact: F. C. Hinrichs, Administrator, Joseph T. Wright Estate, Rt. 2, Box 55, Clinton, Iowa.

Complete well drilling outfit — 31 Stone, purchased new, used 3 months. Fred Sund, Sr., 0-10554 2nd Ave., Grand Rapids, Mich. Phone: GL 3-2312.

Longyear core drill, mod. UG. 6″ water meter, 2″ and 4″ new pipe, large stock rebuilt pumps. Harris Machinery Co., 501 30th Ave. SE, Minneapolis, Minn.

Eli rotary drilling drawworks mounted on 1956 Chev. truck, 4½ x 5 Gardner-Denver pump, Kelley, swivel, etc. Price, $2,900.

1—Bucyrus-Erie 28-L drilling machine, 5 years old. With 6MZA Waukesha engine, casing strut, tool guide and derrick crane. Priced reasonably. Degen Pipe & Supply Co., Box 107—Red Fork Station, Tulsa, Okla. Phone: HIckory 6-6152.

1 — Completely rebuilt 31 Stone, mounted on 1947 Int. truck. Complete string of 6″ tools. Price, $2,795.

1 — Completely rebuilt 31 Stone mounted on 1947 Chev. truck. Complete string of 4″ tools. Price, $2,595.

1—Model 31 Stone with complete string of 6″ tools. Mounted on 1947 Mack. Price, $2,650.

1—Model 56 Gus Pech boring machine, hyd. derrick, 18″—24″—30″ buckets. Mounted on '49 Chev. truck. Both machine and truck in very good condition. Drive out of our yard at $5,000.

1—55 Speed Star, No. 10162, mounted on 1942 GMC truck. U2 Int. engine, full starting casing reel and line, tool guide. All in excellent condition. Complete string of 6″ tools. Priced to sell, $4,500.

Gill Bit Sharpening Co., Inc., P.O. Box 2375, Spartanburg, S.C.

B-E 20-W mounted on 1951 Ford truck. Machine purchased new in 1955. In good condition. Complete with tools for drilling 6-in. wells. Badger Well Drilling, 6125 W. Fond du Lac Ave., Milwaukee, Wis. HOpkins 6-6290.

Two 24-Ls mounted on 10-wheel trucks. Cables, catheads, spooling device. One rig steam-cleaned, ready for paint. $5,500 each. Contact: Ralph L. Gray, Southville, Mass. Phone: HUntley 5-0449.

1—#16 Ideco with Continental power unit, power derrick hoist, casing line, 36′ telescoping derrick. Mounted on a Chevrolet cab over truck. Contact R. R. Howell Co., Minneapolis, Minn. Phone: FEderal 1-1301.

Bucyrus-Erie 21-W in good condition. Machine mounted on Int. truck. String 4″ tools. Price, $1,995. A. L. Gilles, Mokena, Ill. Mokena 5240.

1—1951 B-E 20-W mounted on 2-ton Int. truck. Complete set of drilling tools, ready to work. Also, 1948 1½-ton Chev. delivery truck, $2,500. Joseph J. Guenthoer, 1747 Bridgetown Pike, Feasterville, Pa. Phone: EL 7-1071.

50 Keystone rig mounted on 40 MPH International half track specially rigged for fast set-ups and efficient operation. Recently overhauled. Like new and painted orange. Available with drill lines, good tool string and everything right down to forge equipment, jacks, blocking, etc. All you need to get started is a pair of gloves. An unusual opportunity. Terms to responsible person. Call Stroudsburg, Pa. HA 1-7730.

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1—22-W B-E drill mounted on 1951 Ford truck.

1—24-W B-E drill mounted on 1952 Ford truck.

1—20-W B-E drill mounted on 1953 Chevrolet truck.

1—1-W B-E drill mounted on 1951 Dodge truck.

Hickory Well Supply Co., Inc., P.O. Box 602, Hickory, N.C. Phone: DI 5-4125.

MISCELLANEOUS FOR SALE

1—#12 B-E electric bit dresser, less motor, with furnace and blower, less fire bricks. Two bit quenching racks and misc. dollies and dies for 6″ bits. Spare parts also included. Price, $2,750.

1—U4—Int. power unit. Practically new, $300.

Gill Bit Sharpening Co., Inc., P.O. Box 2375, Spartanburg, S.C.

One extra-heavy 30″ quadruple, 60-ton capacity casing block with 18″ sheaves. Complete including 6″ forged bearing swivel hook. Maximum recommended rope size 1⅛″. For quick sale asking price—⅓ off list. Bucyrus-Erie Co., South Milwaukee, Wis.

New and used pipe and casing. Also used well drilling rigs. Tom's Well Driller Supplies, 1225 Lancaster Ave., Reading, Pa. Phone: SPruce 7-6331.

Good used air compressor or older rotary machine equipped with one. About 350 cu. ft. capacity, high volume, low pressure. Joseph A. Hartmann, New Prague, Minn.

Attractive prices on water well pipe. New 6″ seamless and 6″ used. Other sizes 4″ through 20″, any lengths. Write Goodman Bros. Inc., Bradford, Pa. Phone: FO 8-3717.

Army 4 x 4s and 6 x 6s, some like new. Schwartz Auto Parts, Lancaster Rd., Clinton, Mass. Phone: EMpire 5-6000.

Two 15,000 gal. tanks; one 10,000 gal. tank. Used for fuel oil. Good condition. Write for specifications. W. E. Kerr, 1109 N. Mulberry, Mt. Vernon, Ohio.

New pipe casing in stock: 3″, 4″, 6″, 8″, 10″, 12″. Reconditioned pipe casing in stock: 3″, 4″, 4½″, 5″, 6″, 8″, 10″, 12″. Cutting and threading facilities; attractive prices on request. H. Schwartz & Sons, 2235 N. Bodine St., Phila., Pa. Phone: GArfield 6-6464.

EQUIPMENT WANTED

Bucyrus-Erie model 1-W with rotary attachment. Contact Morrison Well Co., Freeborn, Minn.

WELL BUSINESS FOR SALE

Established well drilling business for sale, with or without property. Retirement is reason for selling. Floyd Hines, S. Church St., Hudson, Mich.

Established well drilling business for sale in Delaware Valley, southeastern Pennsylvania. Equipment includes three drills complete with tools and lines, pickup truck and other equipment. Priced very reasonable because owner wishes to retire. The Driller, Box 774, South Milwaukee, Wis.

WANTED

Interested in buying or investing in water well drilling, pump or similar business. Inquiries confidential. Write: THE DRILLER, Box 780, South Milwaukee, Wis.

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Submersible pump manufacturer seeks authorized West Coast service stations for pump and motor repairs. Franchised sales territories available, also. For details write: THE DRILLER, Box 81, South Milwaukee, Wis.

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Pump . . .

(Continued from page 65)

speed? Up to 3,500 watt models may be either 1,800 rpm or 3,600 rpm. The higher speed means a lighter and less costly unit. They are used for standby and for portable plants to provide electric power for tools and lights. They are used by contractors who must work where power is not available. The 1,800 rpm plants are for continuous service where there is no other source of electricity. For continuous operation, the slower speed is recommended. The cost of the lower speed unit is somewhat greater, since a larger engine must be used and more material is required in manufacturing the generator.

Rotary . . .

(Continued from page 41)

for operation from one position. A driller's platform is available as extra equipment.

Cuttings are removed either by air or mud. Air for rotary drilling is supplied by a single-stage 485-cfm compressor. A 5 x 6 mud pump is available. Both the air compressor and mud pump are V-belt driven from the PTO unit.

The standard 10-R comes equipped with a 3⅜-in. three-flute, 18-ft. kelly, a 1½-in. water course swivel and a cast steel yoke. A self-adjusting, built-in breakout wrench accommodates tool joints of 3-in. O D to 4⅛-in. O D.

Located behind the truck cab on the main frame of the 10-R, in order, are: the air compressor, PTO drive unit, mud pump, hydraulic oil tank and cooler, rotary table transmission, draw works bevel gear case, draw works, mast, rotary table and operator's controls (left side).

Two screw-type leveling jacks, a drill pipe rack (right side) and a dust control unit are optional equipment.

Maximum length of the 10-R with standard mast down is 28 feet 5 inches; with longer mast, 32 feet 10 inches. Maximum width is 8 feet and approximate traveling height is 11 feet.

The 10-R joins the smaller 1-W and the larger 30-R models as the third rotary in the popular line of water well drills manufactured by Bucyrus-Erie Co.

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Here is the branch office and supply store Turner's Drillers Supply, Inc., has opened in Okmulgee, Okla. The Albuquerque (N.M.) distributor of the complete line of Bucyrus-Erie water and oil well drills in New Mexico and western Texas recently added Oklahoma to its territory, except the counties of Ottawa, Beaver, Texas and Cimarron. In addition to cable tool rigs, Turner's Okmulgee branch will handle the 30-R rotary and down-the-hole combination drills for water well drilling.

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